The Fecundity of Haddock (*Melanogrammus aeglefinus*) on the Scotian Shelf and Georges Bank (NAFO Subareas 4 and 5), 1969-1973

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ABSTRACT

R.G. Halliday, R.G., and Livingstone Jr., R. 2017. The fecundity of haddock (*Melanogrammus aeglefinus*) on the Scotian Shelf and Georges Bank (NAFO Subareas 4 and 5), 1969-1973. Can. Tech. Rep. Fish. Aquat. Sci. 3201: iii + 43 p.

Estimates of the fecundity of haddock populations in NAFO Divisions 4W, 4X and 5Z in 1969-73 are listed in appendix tables. They are the product of a collaborative project between Canadian and USA government scientists to describe spatial and temporal variations in the fecundity of haddock populations on the Scotian Shelf and Georges Bank. The processes involved in obtaining these estimates, and the factors that may limit the usefulness of some of the data, are described.

RÉSUMÉ

R.G. Halliday, R.G., and Livingstone Jr., R. 2017. The fecundity of haddock (*Melanogrammus aeglefinus*) on the Scotian Shelf and Georges Bank (NAFO Subareas 4 and 5), 1969-1973. Can. Tech. Rep. Fish. Aquat. Sci. 3201: iii + 43 p

Les estimations de la fécondité des populations d'aiglefin dans les divisions 4W, 4X et 5Z de l'OPANO en 1969-73 sont énumérées dans les tableaux de l'annexe. Ils sont le produit d'un projet de collaboration entre les scientifiques Canadiens et Américains pour décrire les variations spatiales et temporelles de la fécondité des populations d'aiglefin sur le Scotian Shelf et le Banc Georges. Les processus impliqués dans l'obtention de ces estimations et les facteurs qui peuvent limiter l'utilité de certaines des données sont décrits.

INTRODUCTION

A collaborative research program to document the fecundity of haddock populations on the Scotian Shelf and Georges Bank was established by staff of the Fisheries Research Board of Canada (FRB, now Department of Fisheries and Oceans - DFO) Biological Station, St. Andrews, New Brunswick, and the U.S. National Marine Fisheries Service (NMFS) Northeast Fisheries Center, Woods Hole, Massachusetts, in the late 1960s. The focus of the study was on the three major populations that spawned on the offshore banks, Emerald-Western banks on the eastern Scotian Shelf, Browns-LaHave banks on the western Scotian Shelf and on northeastern Georges Bank. These populations supported substantial international fisheries, and conservation measures were under consideration in the International Commission for Northwest Atlantic Fisheries (ICNAF[1]) at that time. No studies of fecundity had been conducted for these populations and it was thought that the present project would contribute knowledge that would improve the basis for scientific advice on regulation of fishing. The small coastal populations of haddock that existed in these Divisions (e.g. Kohler, 1959, Grosslein, 1962, Halliday and McCracken, 1970, Fowler, 2011) were ignored in this study.

A plan was devised for collection of late-ripening haddock ovaries from the ICNAF Statistical Divisions (Div.) 4W (eastern Scotian Shelf), 4X (western Scotian Shelf) and 5Z (Georges Bank) during the five years 1969-73, and sample collection was executed very largely as intended. However, the process of egg counting, undertaken initially by the Canadian participants, presented a number of technical issues that delayed fecundity estimations. Thus, the

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[1] The agency responsible for regulation of the fishery prior to extensions of jurisdiction by coastal states in 1977.

USA participants undertook the fecundity estimation for samples from 5Z, the area of primary interest to them, for 1972-73.

Manuscripts presenting the results from these1972-73 collections from 5Z were drafted by NMFS personnel in the period 1979 – early 1980s to meet their program requirements. The first of these was made publicly available through the Woods Hole Laboratory's "Laboratory Reference" series (Livingstone and Pennington, 1979), but the version posted on the NMFS web site is incomplete and of no value. Three subsequent draft reports regarding the program were produced by NMFS in the early 1980s but they were not made publicly available. One of these drafts included a graph of Div.5Z data illustrating Canadian estimates for 1970-71 as well as the USA 1972-73 data. This graph was subsequently included in a primary publication by Lough et al. (2008). Also, Garrod (1973), in an analysis of the dynamics of a variety of North Atlantic fish stocks, utilized unspecified data on fecundity of Div.5Z haddock that was provided to him by the Woods Hole Laboratory. However, no descriptions of sample collection, fecundity estimation, data evaluation, and results for the program as a whole, are available. The present report provides such a description, and a listing of final results is to be found in accompanying Annexes 1-4.

MATERIALS AND METHODS

SAMPLE COLLECTION

Samples were collected annually from both research vessel catches and commercial fishery landings during the 5-year period 1969–73 from each of the Divisions 4W, 4X and 5Z. Samples from 4W and 4X were, in large part, collected by Canada and those from 5Z by USA personnel, reflecting the distributions of national commercial fishing and research survey activities. Although the sampling plan called for a stratification of sampling only by Statistical

Division and year, finer scale data on area and depth of fishing, and the date of sampling, were collected in all cases. The fishing area designations used were those already utilized by Canada and the USA for collection of domestic fishery statistics, and these were referred to as "unit areas" by Canada and "subareas" by the USA (Halliday and Pinhorn, 1990).

Sampling was conducted during the winter-spring pre-spawning and spawning seasons, i.e. samples came from fish that were caught in January to April (except 2 caught on May 3), with February and March being the primary months.

The ovary samples collected came from fish that were classified as late ripening, i.e. those with ovaries that contained enlarged eggs that were obviously developing yolk, but showed no external evidence of containing ripe, translucent, eggs. In addition to this material, preserved ovaries from ripening haddock caught on Georges Bank in 1955 and 1956, and subsequently stored at the Woods Hole Laboratory, were utilized.

DATA RECORDING

During field sampling, fish length (fork length) was recorded, and otoliths were usually collected for subsequent age determination, from each of the fish from which ovaries were retained. Data on fish weight also were usually recorded, but the weight measured varied, depending on sampling conditions, between round (total) and gutted weights, and gutted weights varied between having gills in and gills out, making the weight data of little use. Gonad weight was recorded also by USA personnel at the time of sample collection. Sample numbers were assigned chronologically, regardless of area sampled, and these are retained here for continuity in sample documentation. However, the data summaries presented are organized by Statistical Division and year of capture.

FECUNDITY ESTIMATION: CANADA

The initial plan was that fecundity estimation would be conducted by the Canadian side and thus ovary collections made by NMFS in 1969-71 were transported to the St. Andrews Biological Station for processing. However, technical issues delayed egg counting severely (see below), causing NMFS personnel to retain and process samples collected by them in 5Z in 1972 and 1973 at the Woods Hole Laboratory, using different methods from those being used at the St. Andrews Biological Station.

The ovary samples to be processed by FRB personnel were preserved in Gilson's fluid (Simpson, 1951) (each sample being stored in a separate jar). Ovaries were sliced open to allow penetration of the preservative and jars were shaken periodically in an electrically powered shaker to separate eggs, extraneous material being decanted. Once separated, egg samples collected in 1969 and 1970, and in part those from 1971, were dried in anticipation of automatic counting using a Decca Mastercount machine, which had been reported by Boyar and Clifford (1967) as providing rapid and accurate counts of herring eggs. However, in the present case, the counts it produced proved to be unreliable, as subsequently found to be the case also in tests of this machine on Pacific halibut eggs by Schmitt and Skud (1978). Thus, the eggs were rehydrated for the application of alternative counting methods.

The first alternative investigated was to use a Stempel pipette (e.g. Van Guelpen et al., 1982) to extract subsamples of eggs from a beaker of water in which all eggs were presumed to be suspended randomly due to constant stirring. Subsamples were counted manually, and fecundity was estimated based on the ratio of water volume in the beaker to that sampled by the pipette. Some 1969 samples, and most 1971 samples, were counted using this method. However, it proved difficult to randomize egg distributions, and thus to obtain unbiased samples, and this method was abandoned also.

Finally, a whirling vessel, as devised by Wiborg (1951) and modified by Pitt (1965), was adopted. This device had been used in studies of the fecundity of haddock (Hodder, 1963) and American plaice (Pitt, 1963) in the Newfoundland area. Sampling procedure was to fill the whirling vessel with water, add the eggs, rotate the vessel, and then stop it, allowing the eggs to settle into the 10 equal sized chambers in its bottom. In the present study, rotation was performed several times until the eggs appeared to be divided equally among the chambers. Two chambers were then selected randomly and the eggs they contained were drawn off through a spigot at the bottom of each chamber. Each of these 1/10th samples was then subsampled using the same technique (giving four 1/100th samples) and each of these was again subsampled (giving eight 1/1000th samples). The eggs in each of these eight subsamples were then lined up in a tray and counted by eye under low magnification. The arithmetic mean of the eight counts, multiplied by one thousand, gave the estimate of total fecundity for that specimen. Initial duplicate counts for test samples gave results that agreed closely ($n=8$, $R=0.99$), and thus this method was adopted for all Canadian samples.

FECUNDITY ESTIMATION: USA

Samples collected by NMFS staff in 1972-73, and retained by them for egg counting, were preserved in Davidson's solution, a histological preservative (Henderson, 1963), because of concerns that exposure to Gilson's fluid, an ingredient of which is mercuric chloride, posed a safety hazard.

At the time of egg counting, ovaries were removed from their container, surface preservative was dried off, and the ovaries were weighed. A sample (plug) was then removed from the mid-section of one ovary using a borer (a metal tube with its end sharpened). Borers of either 7 or 11mm diameter were used (the smaller being chosen when eggs were small for the

sake of counting efficiency), and the sample was immediately weighed (to the nearest 0.001g). Eggs in the plug were then separated using a mechanical mixer (the Sorvall Omni-mixer, a commercial product), and washed repeatedly to remove extraneous material.

The separated eggs were then counted using an electronic counter devised in-house by Crossen (1962). This device enumerated eggs as they were streamed in water through a plastic tube in single file past a photoelectric cell. For each fish, a subset of 300-800 eggs from the subsample was hand-counted and then used to calibrate photocell sensitivity and to establish which tube size was the better to use. The entire plug sample was then counted, and the total was corrected by the ratio of the hand-count/electronic-count for the test subsample (average correction = 2.1% (SE 0.2%)). Fecundity was estimated as the ratio of total weight of ovaries divided by plug weight, multiplied by the corrected number of eggs in the plug.

INTER-CALIBRATION OF METHODS

Livingstone and Pennington (1979) record the single comparison between the USA plug and the final Canadian (whirling vessel) counting methods. This consisted of an exchange of 17 ovarian plug samples (to Canada) and of 11 whole ovaries (to USA). The correlation coefficient ($R^2 = 0.99$) was highly significant.

DATA AMALGAMATION AND EDITING

Canadian and USA electronic data files were standardized and amalgamated in 1987 by Halliday in collaboration with Wallace Morse (NMFS). It is these data that are provided in the present report. As a result of the editing that accompanied this amalgamation, the data reported here for SA5 haddock in 1972-73 differ in some regards from those used in the unpublished MS reports mentioned above.

RESULTS

SAMPLING PERFORMANCE

Samples were collected in all three areas 4W, 4X and 5Z in each of the five years 1969 to 1973. From these samples, fecundity was estimated for 1367 specimens (Table 1), thus averaging 91 per sampling area per year. However, the number of estimates varied substantially among these area/year strata, only 21 being obtained from 5Z in 1973, whereas 172 were obtained from 4W in 1970 (Table 1).

Unit Area information shows clearly that samples were of fish caught on the offshore banks, as intended, at least in very large part. In 4W (Table 1A), samples from commercial vessels in unit area D, south of Cape Breton, in 1973 raise a question regarding their attribution to coastal or offshore spawning populations, as this unit area is predominately in coastal slope waters, distant from the main offshore spawning area. In 4X (Table 1B), most samples are from the off-shore unit areas N and P but samples from area O were of substantial importance in 1969-70. Area O extends from the shore to the northern slopes of the offshore banks. Positional Information was available for the area O sample in 1970 and that shows that it was collected from the offshore part. No positional information is available for the 1969 samples but it is almost certain that they were caught offshore also as there was essentially no inshore fishing conducted at that time of year. Samples from 5Z (Table 1C) came largely from the areas J and M – the northeast of Georges Bank and secondarily from the central areas of the bank, areas H and N. However, small numbers of samples came also from unit area G, adjacent to Cape Cod, and could contain fish from the Gulf of Maine coastal populations. In 1969 and 1970, 9 and 15 fish respectively were sampled from area G (12% and 17% of the totals from SA5 in these years) but in 1971-73, only 1-2 fish per year were sampled from this area.

FECUNDITY ESTIMATES

The results of the project, in the form of listings of the final estimates of fecundity for each fish, are provided in annexes 1-4 to the present report.

DISCUSSION

The initial sampling plan to obtain estimates of fecundity of the offshore haddock populations in the eastern and western Scotian Shelf and on Georges Bank for the five years, 1969-73, was fully implemented. There were technical problems with egg counting procedures, however, which greatly delayed the completion of fecundity estimation by DFO personnel and required NMFS staff to undertake the estimations for the 5Z population for 1972 and 1973. The previous reports concerning this substantial project, i.e. the USA Laboratory Reference No.79-09 and subsequent unpublished revised drafts, used only those data for the Georges Bank population in 1972-73, i.e. the estimates made by US personnel, with one exception. This exception included the 1970-71 estimates by Canadian personnel for 5Z, and it was found that these were lower than those for 1972-73. It was a text figure from this report that was included in Lough et al. (2008). It was proposed in both the unpublished and published reports that these lower fecundity estimates for 1970-71 were due to deficiencies in Canadian methodology. Specifically, they identified egg deterioration due to storage of the Canadian samples in Gilson's Fluid for periods of more than 2-3 months as the cause for the lower estimates, a problem that had been reported by Hodder (1963). This was likely an ill-founded conclusion. It was true that most samples processed in Canada were stored in Gilson's Fluid for rather longer than 2-3 months, eggs being separated, cleaned and dried during the summer months following collection, when temporary student help was available. However, the results of Hodder were known at that time, and egg deterioration was not identified as a problem. (Personal discussions with Hodder

qualified his results – his initial samples, which were archived in Gilson's for 6 months to a year, may not have contained enough alcohol and this, rather than storage time, may have been the explanation for the deterioration.)

A stronger basis for reservations about Canadian estimates is that, for 1969-71 samples, the eggs, once separated, were dried in preparation for counting with the Decca Mastercount machine. These samples were then re-hydrated in preparation for subsampling, using the Wiborg whirling vessel, prior to hand counting. It is conceivable that there was some degree of damage to eggs, resulting in some loss, during drying and rehydrating procedures. In addition, in the case of the 1969 samples, about 70% were counted by the Decca Mastercount machine, which may have caused some egg degeneration in these samples. However, these reservations do not apply to the 1972-73 samples, which were not dried.

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Div. 4W				
Year	Sample number	Unit Area	No. of obs.	Source
1969	5	H (455)	35	Can. RV
1970	10	L (458)	59	Can. Com.
	11	K (457)	28	Can. RV
	11	H (455)	75	Can. RV
	11	J (456)	7	Can. RV
	11	L (458)	3	Can. RV
		Total	172	
1971	16	L (458)	43	Can. RV
	17	L (458)	25	Can. RV
	18	L (458)	18	Can. RV
	19	J (456)	8	Can. RV
	20	J (456)	67	Can. Com.
		Total	161	
1972	23	J (456)	7	Can. RV
		L (458)	40	Can. RV
		Total	47	
1973	27	L (458)	28	Can. Com.
	28	D (451)	35	Can. Com.
		Total	63	

Table 1(a). Inventory of samples from NAFO Division 4W used in Canada-USA haddock fecundity study, 1969-73.

Div. 4X				
Year	Sample number	Unit Area	No. of obs.	Source
1969	1	O (463)	6	Can. Com.
	2	O (463)	15	Can. Com.
	3	O (463)	40	Can. Com.
	4	N (462)	53	Can. Com.
	7	N (462)	2	USA RV
	7	O (463)	1	USA RV
		Total	117	
1970	8	O (463)	30	Can. Com.
	9	N (462)	52	Can. Com.
	12	N (462)	23	Can. RV
	12	P (464)	51	Can. RV
		Total	156	
1971	21	N (462)	20	Can. RV
		P (464)	45	Can. RV
		Total	65	
1972	24	N (462)	58	Can. RV
	26	N (462)	19	USA RV/Com.
		P (464)	2	USA RV
		Total	79	
1973	29	Mixed	34	Can. Com.
	30	N (462)	35	USA Com.
		P (464)	20	USA Com.
		Total	89	

Table 1(b). Inventory of samples from NAFO Division 4X used in Canada-USA haddock fecundity study, 1969-73.

ANNEX 1

Inventory of data and results of haddock fecundity estimates for Div. 4W.

S.	Date	Area	Depth	Source	Orig. S.	Fish	Len.	Weights				Age	Egg Counts								
no.	D./M./Y.	code	fm.		no.	no.	cm.	Round	GGI	GGO	Ovary		1	2	3	4	5	6	7	8	Ave
5	240369	455	71	2	16	49	60					7	1975	1935	1682	1750	1440	1446	2012	1776	1752
5	240369	455	71	2	16	54	50					6	517	417	421	451	429	403	416	421	434
5	240369	455	71	2	16	59	41					3	164	168	249	217	204	151	182	151	186
5	240369	455	71	2	16	60	46					4	244	260	260	232	228	214	312	253	250
5	240369	455	71	2	16	73	53					6	387	357	393	405	429	403	396	430	400
5	240369	455	71	2	16	84	67					8	970	1115	1015	1169	942	982	915	1015	1015
5	240369	455	71	2	16	85	51					6	474	458	400	473	494	457	403	449	451
5	240369	455	71	2	16	86	55					6	704	795	740	686	946	706	712	743	754
5	240369	455	71	2	16	87	42					4	277	267	248	266	258	235	281	271	263
5	240369	455	71	2	16	89	48					4	315	313	316	296	267	290	315	288	300
5	240369	455	71	2	16	102	62					6	255	275	268	282	287	238	284	274	270
5	240369	455	71	2	16	105	53					6	479	424	512	428	429	419	332	371	424
5	240369	455	71	2	16	106	68					7	1014	896	992	934	866	970	1003	812	936
5	240369	455	71	2	16	107	56					6	547	509	586	519	492	523	551	624	544
5	240369	455	71	2	16	108	67					8	1292	1114	1053	989	992	979	835	981	1029
5	240369	455	71	2	16	109	51					5	666	562	631	591	566	550	597	534	587
5	240369	455	71	2	16	110	45					4	436	462	402	357	339	348	334	392	384
5	240369	455	71	2	16	111	55					6	149	228	269	272	129	225	172	233	210
5	240369	455	71	2	16	121	47					5	230	211	205	206	237	190	218	218	214
5	240369	455	71	2	16	123	39					3	76	58	67	103	62	74	52	47	67
5	240369	455	71	2	16	136	50					6	462	463	472	392	637	536	547	528	505
5	240369	455	71	2	16	137	58					7	896	973	895	831	835	859	902	844	879
5	240369	455	71	2	16	138	51					5	406	483	418	441	456	426	445	403	435
5	240369	455	71	2	16	139	51					5	234	279	199	212	233	249	298	320	253
5	240369	455	71	2	16	140	49					6	488	469	520	458	339	351	392	406	428
5	240369	455	71	2	16	141	66					7	1058	1169	1056	902	914	1074	800	725	962
5	240369	455	71	2	16	142	55					6	792	636	646	631	653	614	765	669	676
5	240369	455	71	2	16	143	43					4	194	217	177	177	167	213	186	183	189

5	240369	455	71	2	16	144	37			4	150	147	131	126	124	109	156	138	135	
5	240369	455	71	2	16	172	56			7	926	1032	807	827	951	974	1048	930	937	
5	240369	455	71	2	16	173	54			5	575	664	501	576	526	608	505	506	558	
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5	240369	455	71	2	16	176	56			6	861	864	719	822	791	875	774	748	807	
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10	220370	458		1	3	5	56	1588		7	650	654	680	610	560	626	605	626	626	
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10	220370	458		1	3	18	59	1361			533	496	524	467	541	532	492	659	531	
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10	220370	458		1	3	29	45	766			359	339	347	370	331	331	388	343	351	
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10	220370	458		1	3	33	43	737			239	241	279	341	358	286	324	353	303	
10	220370	458		1	3	34	49	992			88	81	102	102	88	69	111	94	92	
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10	220370	458		1	3	38	56	1474			701	606	554	583	644	730	752	762	667	
10	220370	458		1	3	39	60	2013			1250	1254	1262	1248	1126	1052	1205	1122	1190	
10	220370	458		1	3	40	52	1106		8	617	526	543	601	568	565	556	623	575	
10	220370	458		1	3	41	65	2126			1049	996	973	1046	983	970	1055	1079	1019	
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10	220370	458		1	3	45	60			1928		750	725	595	673	592	673	597	639	656
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10	220370	458		1	3	59	52			1304		421	411	400	450	651	603	576	583	512
10	220370	458		1	3	62	42			652	4	169	173	223	173	180	152	162	175	176
10	220370	458		1	3	63	51			1162		457	515	531	570	576	550	496	530	528
10	220370	458		1	3	68	66			2268		681	787	671	717	784	724	736	686	723
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10	220370	458		1	3	71	47			936		459	473	415	432	476	379	374	465	434
10	220370	458		1	3	73	52			1389		440	345	334	345	310	365	404	357	363
10	220370	458		1	3	75	41			624		307	289	277	308	289	268	250	261	281
10	220370	458		1	3	81	57			1559		805	816	768	711	789	817	692	683	760
10	220370	458		1	3	82	47			936		407	344	323	329	313	339	353	377	348
10	220370	458		1	3	83	55			1474		697	629	623	711	666	729	674	740	684
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10	220370	458		1	3	89	54			1475		871	813	844	865	889	879	887	828	860
10	220370	458		1	3	90	42			737		361	365	371	351	364	376	358	413	370
10	220370	458		1	3	91	47			936		310	280	256	242	296	345	314	272	289
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10	220370	458		1	3	119	38					249	240	238	231	253	327	286	277	263
10	220370	458		1	3	120	44					374	322	311	347	280	290	272	235	304
10	220370	458		1	3	146	39					217	226	252	230	254	204	249	253	236
10	220370	458		1	3	151	38					236	248	211	253	257	301	280	313	262
10	220370	458		1	3	153	38					181	183	203	196	212	197	216	222	201
11	140370	457	73	2	4	50	50	1400	1200		7	509	452	454	510	462	428	458	513	473
11	140370	457	73	2	4	51	67	3500	2800		8	1746	1784	1805	1844	1705	1827	1651	1648	1751
11	140370	457	73	2	4	53	62	2500	2000		8	1354	1482	1318	1253	1129	1225	1201	1167	1266
11	140370	457	73	2	4	54	55	1700	1500		8	501	446	677	583	825	694	531	577	604

11	140370	457	73	2	4	55	54	1700	1300
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11	140370	457	73	2	4	58	59	2500	2000
11	140370	457	73	2	4	59	56	1800	1500
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11	140370	457	73	2	4	61	56	1800	1600
11	140370	457	73	2	4	62	54	1800	1500
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11	140370	457	73	2	4	64	54	1700	1500
11	140370	457	73	2	4	65	59	2300	1900
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11	140370	457	73	2	4	67	51	1300	1100
11	140370	457	73	2	4	68	55	2000	1500
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11	140370	457	73	2	4	71	51	1400	1200
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11	140370	457	73	2	4	74	58	1800	1500
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11	140370	457	73	2	4	76	52	1200	1100
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11	140370	457	73	2	4	78	55	1800	1500
11	140370	457	73	2	4	79	56	1950	1500
11	140370	455	73	2	5	80	58	2000	1700
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11	140370	455	73	2	5	88	49	1100	900
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11	140370	455	73	2	5	95	50	1400	1200
11	140370	455	73	2	5	96	51	1400	1200
11	140370	455	73	2	5	97	58	1900	1500
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7	614	718	679	624	735	685	626	774	682
7	523	406	576	552	537	497	477	506	509
7	933	927	952	990	866	736	846	981	904
5	1005	1006	1107	1116	1033	982	990	840	1010
7	768	686	684	846	700	702	721	754	733
7	620	573	553	740	666	668	711	769	663
7	699	632	719	703	618	649	624	656	663
7	673	668	608	629	611	673	592	609	633
7	813	780	747	815	720	764	778	720	767
7	947	956	825	814	778	811	899	887	865
8	835	887	852	871	919	826	866	922	872
5	388	308	291	305	455	410	320	298	347
6	810	683	677	733	816	778	763	847	763
6	701	666	730	688	802	645	722	744	712
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6	528	483	482	452	539	584	609	572	531
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7	470	469	711	582	525	607	575	579	565
6	409	354	394	437	456	426	423	461	420
5	469	561	584	554	474	446	411	420	490
5	204	220	204	173	186	148	177	162	184
7	855	837	790	889	582	681	707	659	750
7	778	794	770	679	782	632	518	593	693
7	861	798	904	1020	1038	736	817	844	877
7	788	618	822	895	789	867	739	705	778
8	1369	1283	1290	1701	1387	1273	1355	1419	1385
6	829	1104	953	908	804	895	917	869	910
7	914	858	843	867	865	902	842	784	859
5	440	459	490	479	423	541	455	584	484
7	785	853	912	863	914	608	826	785	818
7	614	500	766	754	789	693	640	669	678
6	341	344	423	409	386	344	410	377	379
5	416	428	407	412	335	395	504	396	412
5	557	556	471	554	492	560	486	436	514
6	762	747	752	843	816	705	702	733	758
5	367	364	425	499	353	343	390	383	391

11	140370	455	73	2	5	100	50	1300	1100
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11	140370	455	73	2	5	108	40	700	600
11	140370	455	93	2	6	119	55	1600	1400
11	140370	455	93	2	6	122	63	2700	2200
11	140370	455	70	2	7	126	67	3100	2500
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11	140370	455	70	2	7	128	63	2600	2100
11	140370	455	70	2	7	129	58	2000	1600
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11	140370	455	81	2	8	163	54	1700	1475
11	140370	455	81	2	8	165	53	1800	1500
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11	140370	455	81	2	8	169	55	1900	1500
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11	140370	455	81	2	8	171	65	3600	2100
11	140370	455	81	2	8	173	57	1700	1500
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11	140370	455	81	2	8	179	64	2500	2100
11	140370	455	81	2	8	180	55	1500	1100
11	140370	455	81	2	8	182	52	1500	1100

4	488	493	528	510	459	510	506	497	499
6	504	536	501	478	432	390	438	373	457
4	200	169	198	174	185	192	177	175	184
7	659	617	612	595	649	600	764	698	649
7	1083	1308	1023	910	1686	1460	1482	1631	1323
10	1629	1651	1537	1369	1411	1666	1372	1570	1526
7	1720	1554	1841	1688	1496	1676	1739	1318	1629
9	1214	1095	1103	1158	1231	979	1263	1278	1165
7	638	781	682	612	806	618	662	630	679
8	1475	1655	2168	2112	1872	1770	1756	1969	1847
7	796	668	756	820	712	578	630	539	687
8	1019	1022	1247	1106	1039	1082	1152	1079	1093
6	788	847	643	711	970	921	788	779	806
6	620	542	698	626	517	445	695	626	596
5	287	266	348	297	246	308	276	294	290
4	862	790	848	891	799	775	795	811	821
6	765	742	752	767	676	730	843	772	756
7	577	557	584	546	502	529	507	572	547
7	491	502	503	424	446	461	506	483	477
7	443	370	375	388	356	332	286	328	360
6	385	455	369	326	377	358	483	432	398
7	628	631	575	585	500	722	585	722	619
6	426	406	405	521	574	486	521	451	474
6	717	681	553	656	668	706	567	573	640
7	777	734	665	724	1099	915	851	921	836
7	818	833	897	931	863	934	847	939	883
6	618	583	521	520	455	466	519	541	528
7	746	687	780	737	755	754	874	907	780
6	460	432	542	528	444	490	495	453	481
7	1330	128[illegible]	1114	1087	1133	1256	1289	1358	1231
7	626	64[illegible]	634	617	798	722	757	777	697
6	1273	112[illegible]	1298	1206	1124	1081	1058	1022	1149
7	946	931	874	951	980	1077	1034	1142	992
7	1057	1081	1245	1192	1256	1483	1246	1451	1251
6	686	732	789	705	737	660	829	833	746
7	381	373	432	465	486	471	445	487	443

11	140370	455	81	2	8	199	48	1000	900
11	150370	456	56	2	12	207	62	2200	1900
11	150370	456	56	2	12	208	58	2000	1800
11	150370	456	56	2	12	209	59	2100	1800
11	150370	456	56	2	12	210	63	2200	1900
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11	150370	456	56	2	12	215	48	1100	1000
11	150370	456	56	2	12	217	49	1175	975
11	150370	455	69	2	13	239	67	3400	3100
11	150370	455	69	2	13	240	59	2500	2000
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11	150370	455	69	2	13	252	55	2000	1600
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11	150370	455	69	2	13	262	55	2200	1800
11	150370	455	69	2	13	264	52	1700	1300
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11	150370	455	69	2	13	270	53	1800	1500
11	150370	455	69	2	13	271	54	1800	1500
11	150370	455	69	2	13	274	48	1300	1100
11	150370	455	69	2	13	281	43	900	700
11	150370	455	69	2	13	282	47	1100	1000
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11	150370	455	69	2	13	296	54	1700	1400
11	150370	455	69	2	13	304	48	1400	1100
11	150370	458	75	2	14	306	71	3700	3100
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4	372	406	388	388	375	409	364	310	377
7	830	809	754	842	816	987	823	742	825
5	740	708	833	816	900	869	771	831	809
6	784	731	786	685	851	860	871	863	804
8	665	645	781	795	813	784	761	746	749
6	808	865	907	771	707	629	689	645	753
4	338	351	339	329	367	372	287	351	342
5	337	346	311	325	294	302	294	236	306
8	921	839	996	929	771	811	859	824	869
7	881	858	805	912	914	852	854	814	861
7	650	655	512	522	583	594	681	691	611
7	987	894	922	827	658	669	877	873	838
9	1052	995	1017	975	920	854	993	983	974
7	1165	1133	1479	1404	1183	1094	1070	1059	1198
6	655	618	620	648	580	710	682	573	636
8	758	768	705	704	690	649	683	720	710
5	373	385	371	357	420	431	427	414	397
6	741	718	810	858	676	732	740	802	760
7	725	694	704	659	681	750	693	672	697
8	1314	1162	1367	1310	1594	1402	1478	1464	1386
7	559	640	598	636	569	689	631	580	613
6	573	507	490	496	504	491	469	474	501
7	718	747	675	832	842	960	956	882	827
4	260	231	212	247	260	247	291	284	254
5	630	588	605	513	530	548	575	555	568
5	601	661	585	699	657	668	637	633	643
4	420	486	496	467	526	493	476	409	472
4	261	259	246	228	230	254	257	269	251
4	190	190	236	194	211	245	157	191	202
5	310	341	319	308	333	367	411	398	348
5	369	344	364	353	398	376	383	412	375
5	408	373	357	362	391	365	337	434	378
6	360	416	425	377	336	393	358	500	396
5	614	648	552	571	507	558	497	535	560
10	789	824	531	717	918	796	798	888	783
7	904	933	1215	1152	1036	744	822	880	961

11	150370	458	75	2	14	312	54	2200	1600
16	30371	458	68	1	2	3	48		900
16	30371	458	68	1	2	14	56		1925
16	30371	458	68	1	2	15	61		2250
16	30371	458	68	1	2	18	40		600
16	30371	458	68	1	2	23	48		1025
16	30371	458	68	1	2	24	63		2250
16	30371	458	68	1	2	26	63		2100
16	30371	458	68	1	2	27	68		2950
16	30371	458	68	1	2	30	61		2225
16	30371	458	68	1	2	43	56		1625
16	30371	458	68	1	2	44	40		525
16	30371	458	68	1	2	45	54		1450
16	30371	458	68	1	2	47	52		1375
16	30371	458	68	1	2	50	70		2900
16	30371	458	68	1	2	53	49		1150
16	30371	458	68	1	2	60	41		650
16	30371	458	68	1	2	61	42		725
16	30371	458	68	1	2	63	43		750
16	30371	458	68	1	2	64	47		1000
16	30371	458	68	1	2	65	60		1975
16	30371	458	68	1	2	72	59		1950
16	30371	458	68	1	2	74	41		625
16	30371	458	68	1	2	78	43		725
16	30371	458	68	1	2	79	59		2150
16	30371	458	68	1	2	80	56		1675
16	30371	458	68	1	2	81	48		1100
16	30371	458	68	1	2	82	44		775
16	30371	458	68	1	2	86	49		1100
16	30371	458	68	1	2	89	46		1000
16	30371	458	68	1	2	90	48		1000
16	30371	458	68	1	2	92	57		1775
16	30371	458	68	1	2	95	44		800
16	30371	458	68	1	2	96	54		1675
16	30371	458	68	1	2	98	57		1600

6	493	554	398	504	615	613	554	503	529
5	433	462	515	559	456	436	487	504	482
8	623	627	632	607	638	629	641	625	628
8	648	647	653	655	606	608	611	697	641
4	186	177	225	179	181	152	170	215	186
4	469	518	514	496	522	538	556	561	522
8	675	720	642	579	647	619	553	778	652
9	944	852	908	843	920	935	981	994	922
8	1345	1337	1350	1536	1256	1256	1519	1643	1405
7	1370	1145	1141	1128	1315	1321	1370	1378	1271
8	653	742	759	749	698	767	651	778	725
4	203	225	227	252	202	237	197	204	218
5	545	524	484	487	522	565	573	581	535
6	774	816	727	709	856	722	834	738	772
9	1630	1598	1569	1587	1488	1560	1727	1549	1589
5	268	251	293	278	262	262	211	227	257
4	291	233	258	264	246	254	227	249	253
4	359	362	346	324	285	301	303	314	324
5	250	223	207	189	194	207	229	234	217
4	348	336	314	333	367	366	359	385	351
7	692	753	890	769	887	837	752	768	794
8	1078	972	1020	1009	1182	1234	1171	1233	1112
5	236	259	287	225	228	238	318	338	266
4	167	174	162	147	161	190	172	175	169
7	910	915	1095	891	896	1054	1005	968	967
8	553	470	484	496	510	503	556	564	517
5	370	403	347	371	352	327	365	338	359
4	257	259	257	280	293	246	325	283	275
5	247	219	210	187	262	191	247	213	222
5	647	661	617	596	603	475	609	602	601
4	237	290	321	245	222	237	224	208	248
9	610	698	663	655	519	533	601	619	612
5	356	348	392	352	399	397	434	441	390
7	684	704	709	605	782	747	758	732	715
6	822	882	888	817	873	801	845	865	849

16	30371	458	68	1	2	105	41	700		4	214	185	212	208	195	197	215	196	203
16	30371	458	68	1	2	107	59	1950		7	879	873	715	742	719	711	743	727	764
16	30371	458	68	1	2	108	47	950		5	296	259	259	304	272	258	284	299	279
16	30371	458	68	1	2	113	47	950		5	396	370	401	335	353	342	355	398	369
16	30371	458	68	1	2	116	54	1600		7	662	721	615	707	732	609	700	611	670
16	30371	458	68	1	2	117	59	1825		8	1114	1119	1018	975	944	1012	1023	953	1020
16	30371	458	68	1	2	119	71	4750		12	2167	2168	1941	2039	2312	2348	2147	2272	2174
16	30371	458	68	1	2	125	52	1475		5	617	618	616	520	713	742	631	664	640
16	30371	458	68	1	2	127	67	2950		8	1265	1341	1434	1444	1337	1272	1321	1407	1353
17	50371	458	91	1	3	1166	63		1900	7	1079	1121	869	878	925	953	867	891	948
17	50371	458	91	1	3	1170	62		1975	7	600	628	623	549	555	607	614	672	606
17	50371	458	91	1	3	1177	47		775	7	569	512	531	510	487	469	471	476	503
17	50371	458	91	1	3	1178	62		2050	5	595	521	669	694	688	682	659	780	661
17	50371	458	91	1	3	1180	44		725	6	249	251	297	243	233	267	234	229	250
17	50371	458	91	1	3	1186	44		950	4	352	413	354	348	377	416	413	408	385
17	50371	458	91	1	3	1187	59		1850	6	790	694	662	675	669	721	672	688	696
17	50371	458	91	1	3	1188	52		1275	5	627	582	537	612	568	565	600	690	598
17	50371	458	91	1	3	1191	53		1275	7	638	630	601	653	592	521	587	529	594
17	50371	458	91	1	3	1192	66		2375	8	1185	1191	1019	1220	1021	1015	1036	1005	1087
17	50371	458	91	1	3	1193	59		1925	8	776	711	785	737	704	681	754	858	751
17	50371	458	91	1	3	1194	64		2350	8	825	774	817	731	743	675	746	739	756
17	50371	458	91	1	3	1198	53		1250	6	330	319	382	349	278	296	327	323	326
17	50371	458	91	1	3	1201	53		1250	5	450	446	403	441	409	427	416	434	428
17	50371	458	91	1	3	1202	54		1375	5	608	691	678	704	705	694	690	706	685
17	50371	458	91	1	3	1203	69		2700	9	1295	1284	1267	1241	1256	1193	1239	1282	1257
17	50371	458	91	1	3	1204	76			8	1324	1283	1421	1445	1496	1455	1419	1455	1412
17	50371	458	91	1	3	1205	63		2200	7	1470	1444	1605	1677	1513	1669	1645	1515	1567
17	50371	458	91	1	3	1206	50		1050	5	201	212	237	249	223	208	225	202	220
17	50371	458	91	1	3	1211	43		650	4	233	230	257	223	239	261	258	269	246
17	50371	458	91	1	3	1212	53		1200	5	128	132	129	126	127	134	108	146	129
17	50371	458	91	1	3	1222	46		950	5	304	318	271	311	294	302	150	280	279
17	50371	458	91	1	3	1227	48		800	5	475	369	459	393	464	426	473	455	439
17	50371	458	91	1	3	1236	55		1300	5	502	565	494	552	545	509	501	510	522
17	50371	458	91	1	3	1239	52		1275	5	474	461	494	507	512	475	446	470	480

18	50371	458	91	1	4	1242	55		1525
18	50371	458	91	1	4	1243	81		
18	50371	458	91	1	4	1249	65		2225
18	50371	458	91	1	4	1250	57		1600
18	50371	458	91	1	4	1251	57		1650
18	50371	458	91	1	4	1254	54		1425
18	50371	458	91	1	4	1259	52		1050
18	50371	458	91	1	4	1262	53		1200
18	50371	458	91	1	4	1267	58		1550
18	50371	458	91	1	4	1268	52		1300
18	50371	458	91	1	4	1269	59		1600
18	50371	458	91	1	4	1270	57		1525
18	50371	458	91	1	4	1273	57		1400
18	50371	458	91	1	4	1277	55		1250
18	50371	458	91	1	4	1279	57		1600
18	50371	458	91	1	4	1282	50		1200
18	50371	458	91	1	4	1283	73		
18	50371	458	91	1	4	1292	55		

19	140371	456	50	1	5	128	54		1425
19	140371	456	50	1	5	134	56		1600
19	140371	456	50	1	5	139	54		1375
19	140371	456	50	1	5	144	70		3000
19	140371	456	50	1	5	145	57		1675
19	140371	456	50	1	5	150	48		1075
19	140371	456	50	1	5	156	71		3250
19	140371	456	50	1	5	164	68		2675

20	200371	456	52	2	8	49	80	6400	5300
20	200371	456	52	2	8	50	63	3000	2500
20	200371	456	52	2	8	51	48	1200	950
20	200371	456	52	2	8	53	55	1500	1400
20	200371	456	52	2	8	56	48	1100	1000
20	200371	456	52	2	8	57	54	2000	1700
20	200371	456	52	2	8	58	65	3300	2500
20	200371	456	52	2	8	59	49	1300	1100

6	508	580	586	604	732	745	574	556	611
9	1752	1622	1590	1669	1638	1652	1631	1697	1656
8	592	692	710	649	723	738	733	745	698
7	493	597	591	587	590	602	610	575	581
8	528	503	526	512	491	555	489	494	512
6	568	536	666	556	616	583	562	593	585
6	468	474	493	487	407	383	415	486	452
5	371	392	345	383	379	365	432	414	385
7	497	524	529	535	491	518	481	475	506
6	661	646	647	648	681	710	687	638	665
7	661	537	631	586	646	724	619	598	625
6	652	666	691	633	582	602	623	634	635
6	393	405	420	404	416	394	365	360	395
6	640	621	633	698	716	672	623	584	648
8	479	547	503	530	504	534	526	528	519
6	564	522	553	569	530	526	563	521	544
9	1497	1609	1429	1396	1372	1376	1578	1622	1485
	431	504	463	532	426	387	518	473	467

7	773	721	701	776	775	605	842	780	747
7	751	725	789	602	752	659	811	793	735
7	312	387	303	306	388	403	357	370	353
14	1256	1191	1248	1263	1108	1134	1230	1470	1238
8	772	834	788	711	839	809	866	801	803
5	488	464	473	575	441	466	418	405	466
8	1765	1700	1798	1784	1792	1789	1816	1716	1770
8	1074	1176	922	955	1010	1121	1076	1004	1042

12	468	472	532	529	541	546	498	582	521
8	1273	1299	1498	1323	1317	1230	1283	1234	1307
5	407	459	322	358	386	426	430	429	402
6	667	716	638	753	892	911	759	705	755
5	199	238	255	257	209	211	226	201	225
8	803	787	800	770	979	967	780	795	835
9	1205	1201	974	1101	1118	1305	1023	1125	1132
5	499	633	529	651	575	528	634	635	586

20	200371	456	52	2	8	60	58	2000	1800
20	200371	456	52	2	8	61	57	1900	1600
20	200371	456	52	2	8	62	55	1800	1600
20	200371	456	52	2	8	63	46	1000	900
20	200371	456	52	2	8	64	58	2200	1900
20	200371	456	52	2	8	69	48	1200	1000
20	200371	456	52	2	8	70	52	1500	1400
20	200371	456	52	2	8	72	48	1100	1000
20	200371	456	40	2	9	83	71	3400	2800
20	200371	456	40	2	9	90	43	1000	800
20	200371	456	40	2	9	94	47	1100	900
20	200371	456	40	2	9	95	42	900	750
20	200371	456	40	2	9	97	68	4000	3200
20	200371	456	40	2	9	100	58	2300	1700
20	200371	456	40	2	9	102	64	3100	2500
20	200371	456	40	2	9	107	56	2000	1700
20	200371	456	40	2	9	126	48	1275	1075
20	200371	456	40	2	9	140	58	2400	1900
20	200371	456	32	2	10	145	62	2400	1900
20	200371	456	32	2	10	147	57	2000	1600
20	200371	456	32	2	10	151	63	2900	2200
20	200371	456	32	2	10	153	66	3400	2500
20	200371	456	32	2	10	159	61	2400	2000
20	200371	456	32	2	10	160	63	2500	2000
20	200371	456	32	2	10	163	57	1900	1500
20	200371	456	44	2	11	183	67	3300	2600
20	200371	456	44	2	11	200	60	2600	2100
20	200371	456	44	2	11	206	63	2800	2300
20	200371	456	44	2	11	208	70	3200	2600
20	200371	456	44	2	11	231	60	2500	2000
20	200371	456	44	2	11	233	64	3000	2500
20	200371	456	44	2	11	237	60	2500	2100
20	200371	456	44	2	11	244	71	2800	2400
20	200371	456	44	2	11	253	63	2600	2000
20	200371	456	44	2	11	263	63	2300	1900
20	200371	456	44	2	11	266	61	2500	2000

8	842	839	816	848	817	692	727	719	788
6	596	624	692	717	587	695	555	597	633
5	698	667	714	670	635	733	684	590	674
6	358	308	336	324	284	329	284	261	311
6	673	614	661	684	711	679	648	659	666
4	222	212	231	209	238	252	223	201	224
5	598	663	689	728	569	564	625	663	637
4	326	330	363	331	280	327	300	308	321
9	955	869	1092	945	1010	1013	1078	1068	1004
5	308	265	264	284	290	296	269	250	278
5	398	401	379	408	376	373	384	377	387
5	307	331	374	378	302	336	397	342	346
8	881	976	1155	1119	1128	904	999	1021	1023
8	799	810	730	817	875	765	721	786	788
8	697	684	728	641	571	669	668	668	666
6	456	462	420	392	550	555	453	530	477
5	661	656	639	618	511	555	489	525	582
6	1311	1270	1259	1381	1319	1242	1353	1326	1308
9	343	306	374	293	283	307	306	310	315
7	582	581	572	557	523	493	481	535	541
8	912	901	1004	906	972	1030	1014	1110	981
8	890	936	813	774	867	676	866	831	832
8	713	770	833	778	647	652	730	703	728
10	970	1007	917	1040	997	1074	980	980	996
6	541	549	490	474	539	523	552	585	532
9	655	689	604	629	681	695	661	652	658
7	947	1018	910	914	918	852	839	867	908
8	981	1043	988	887	805	840	797	978	915
9	491	450	521	510	465	474	494	494	487
8	911	922	918	853	892	981	912	889	910
8	1014	973	917	869	781	856	779	731	865
7	709	731	669	761	726	763	714	789	733
9	815	805	800	855	928	904	887	845	855
6	1089	1126	969	1077	1146	1197	1175	1118	1112
8	440	401	405	448	448	400	455	441	430
7	742	721	858	836	680	718	784	672	751

20	200371	456	44	2	11	272	56	1800	1475
20	200371	456	44	2	11	274	64	2600	2200
20	200371	456	44	2	11	279	64	3000	2400
20	200371	456	44	2	11	299	61	2700	2250
20	200371	456	44	2	11	301	66	2900	2500
20	200371	456	44	2	11	308	45	950	800
20	200371	456	44	2	11	314	45	875	700
20	200371	456	44	2	11	348	69	3900	3000
20	200371	456	44	2	11	353	46	1000	875
20	200371	456	44	2	11	361	54	1500	1200
20	200371	456	44	2	11	363	52	1500	1100
20	200371	456	44	2	11	367	51	1200	1000
20	200371	456	44	2	11	380	58	2000	1600
20	200371	456	44	2	11	384	64	2700	2200
20	200371	456	44	2	11	385	57	2200	1850
20	200371	456	44	2	11	390	55	1500	1350
20	200371	456	44	2	11	393	63	2600	2200
20	200371	456	44	2	11	404	52	1350	1100
20	200371	456	44	2	11	409	46	1000	800
20	200371	456	44	2	11	411	50	1300	1100
20	200371	456	44	2	11	421	53	1600	1200
20	200371	456	44	2	11	425	62	2600	2200
20	200371	456	44	2	11	427	61	1900	1700
23	70372	456	60	2	12	17	68	3500	3000
23	70372	456	60	2	12	19	68	3500	2900
23	70372	456	60	2	12	20	69	3600	2900
23	70372	456	60	2	12	22	64	2700	2200
23	70372	456	60	2	12	23	62	2400	1900
23	70372	456	60	2	12	33	38	550	450
23	70372	456	72	2	13	80	47	1150	1000
23	90372	458	58	2	16	112	41	700	650
23	90372	458	58	2	16	116	50	1300	1250
23	90372	458	58	2	16	120	50	1300	1250
23	90372	458	58	2	16	124	44	950	900
23	90372	458	58	2	16	129	40	600	575

7	303	362	388	361	351	403	385	396	369
9	496	498	578	598	540	631	529	521	549
8	1242	1356	1048	1137	1288	1261	1237	1426	1249
8	1207	1199	1230	1270	1094	1054	1296	1272	1203
8	459	348	352	442	378	385	393	459	402
4	223	235	254	258	241	237	221	254	240
4	146	149	159	146	184	270	171	184	176
9	1708	1648	1572	1579	1450	1552	1524	1465	1562
4	338	315	283	267	290	311	266	274	293
6	440	415	365	369	477	447	451	464	429
7	573	674	591	666	571	530	503	530	580
5	304	292	388	347	353	360	384	380	351
6	563	717	652	662	734	691	641	629	661
8	683	657	624	607	654	703	653	561	643
5	876	950	1006	1094	1026	1057	1065	1104	1022
6	502	487	497	457	580	547	478	485	504
7	873	857	822	900	806	756	825	858	837
5	643	646	659	684	712	647	645	651	661
4	295	305	281	285	251	252	264	269	275
5	285	334	348	348	372	394	366	440	361
6	766	735	841	805	758	759	810	821	787
8	604	717	661	643	685	703	638	698	669
7	438	448	416	465	489	400	494	415	446
8	1501	1359	1488	1288	1580	1427	1401	1377	1428
9	1384	1676	1512	1445	1630	1451	1481	1419	1500
12	1666	1662	1756	1761	1466	1632	1600	1494	1630
8	1032	1159	988	969	983	1005	945	983	1008
6	679	788	733	721	958	891	921	874	821
3	205	190	192	172	194	197	145	182	185
5	343	355	413	360	343	284	364	414	360
3	241	191	262	221	212	226	231	236	228
5	374	437	349	388	440	432	461	434	414
4	435	445	436	405	401	431	431	436	428
4	362	378	397	356	447	448	440	369	400
3	179	130	176	168	190	198	156	159	170

23	90372	458	57	2	17	150	55	1950	1900
23	90372	458	57	2	17	156	45	1200	1100
23	90372	458	57	2	18	193	64	3100	2900
23	90372	458	57	2	18	205	53	1700	1600
23	90372	458	57	2	18	206	51	1400	1250
23	90372	458	57	2	18	207	49	1200	1100
23	90372	458	57	2	18	211	46	1000	950
23	90372	458	57	2	18	213	46	1100	1050
23	90372	458	57	2	18	216	47	900	700
23	90372	458	57	2	18	257	40	775	625
23	90372	458	55	2	19	296	63	2500	2200
23	90372	458	55	2	19	297	56	1800	1600
23	90372	458	55	2	19	303	52	1200	1150
23	90372	458	55	2	19	308	47	950	900
23	90372	458	55	2	19	310	45	750	700
23	90372	458	55	2	20	433	52	1500	1400
23	90372	458	55	2	20	441	53	1600	1050
23	90372	458	55	2	20	448	46	1150	1100
23	90372	458	55	2	20	450	49	1200	1150
23	90372	458	55	2	20	465	40	600	525
23	90372	458	55	2	21	559	49	1000	950
23	90372	458	55	2	21	560	46	800	775
23	90372	458	55	2	21	589	46	1000	950
23	90372	458	55	2	21	617	37	475	450
23	90372	458	55	2	22	656	46	975	800
23	90372	458	55	2	22	658	57	2000	1700
23	90372	458	55	2	22	665	49	1400	1100
23	90372	458	55	2	22	670	49	1200	1000
23	90372	458	55	2	22	696	47	1200	1150
23	90372	458	55	2	22	712	52	1700	1550
23	90372	458	55	2	22	725	48	1100	1000
23	90372	458	55	2	22	731	47	900	800
23	90372	458	55	2	22	733	45	800	750
23	90372	458	55	2	22	750	53	1500	1350
23	90372	458	55	2	22	757	45	1000	700

6	792	773	822	776	812	852	788	787	800
5	508	432	477	410	473	496	499	495	474
10	964	932	906	996	1138	1045	1049	1000	1004
5	560	500	530	537	584	555	530	545	543
5	710	737	756	712	855	802	792	819	773
5	287	307	322	298	295	289	274	260	292
4	345	353	364	331	356	428	350	348	359
5	394	365	373	345	338	387	324	327	357
5	327	312	311	311	327	340	353	308	324
3	306	383	322	342	307	257	275	283	309
8	390	371	485	383	433	465	435	449	426
6	800	878	718	705	777	830	811	814	792
6	354	436	402	392	340	327	270	354	359
5	416	371	351	363	373	342	321	298	354
5	362	357	312	316	320	341	363	328	337
	737	749	748	698	610	649	748	662	700
	279	287	300	288	274	274	282	251	279
	393	361	372	348	350	307	326	304	345
	416	444	393	395	402	452	386	334	403
	168	160	123	153	158	142	151	141	150
5	541	494	434	448	353	414	477	425	448
5	282	306	341	334	330	309	343	312	320
5	357	414	425	412	376	389	300	388	383
3	130	108	117	126	124	111	118	117	119
4	330	374	397	361	350	344	315	363	354
6	929	952	818	784	838	806	797	786	839
6	476	468	469	495	481	498	509	520	490
5	398	355	470	419	390	451	371	402	407
5	292	315	339	317	304	330	370	342	326
5	612	725	713	741	664	706	722	650	692
5	374	327	358	346	436	319	362	341	358
5	368	396	414	376	357	422	367	397	387
3	233	274	358	301	381	291	350	333	315
5	430	494	419	502	489	509	605	632	510
4	509	493	396	426	464	413	474	488	458

27	30373	458	54	1	1	3	58	1700	6	504	574	582	587	503	510	593	505	545
27	30373	458	54	1	1	15	57	1725	8	910	881	793	849	902	861	878	785	857
27	30373	458	54	1	1	18	61	2050	10	1086	1068	1043	989	1041	956	952	944	1010
27	30373	458	54	1	1	22	58	1750	9	825	831	815	828	782	764	840	779	808
27	30373	458	54	1	1	23	62	2125	9	1356	1477	1258	1386	1358	1307	1419	1352	1364
27	30373	458	54	1	1	24	50	1075	6	439	496	389	409	462	489	479	484	456
27	30373	458	54	1	1	29	56	1500	6	688	650	728	651	601	582	666	621	648
27	30373	458	54	1	1	41	64	2225	9	1311	1131	1088	1175	1173	1189	1073	1222	1170
27	30373	458	54	1	1	42	53	1400	6	446	497	479	434	451	466	393	422	449
27	30373	458	54	1	1	43	60	1925	9	964	947	953	1013	1022	997	1102	1032	1004
27	30373	458	54	1	1	45	58	1800	9	771	820	766	753	849	863	770	900	812
27	30373	458	54	1	1	57	57	1725	7	852	848	816	829	745	816	816	707	804
27	30373	458	54	1	1	60	56	1650	8	693	661	685	633	585	620	605	608	636
27	30373	458	54	1	1	70	63	2300	9	1690	1561	1637	1593	1377	1371	1597	1477	1538
27	30373	458	54	1	1	72	54	1450	8	929	821	736	802	793	925	733	812	819
27	30373	458	54	1	1	74	68	2500	9	1812	1828	1982	1901	1652	1641	1636	1817	1784
27	30373	458	54	1	1	75	61	1925	8	1439	1190	1322	1341	1168	1104	1114	1122	1225
27	30373	458	54	1	1	78	60	1875	7	833	938	809	1026	931	980	1107	973	950
27	30373	458	54	1	1	81	68	2600	10	1290	1252	1312	1397	1309	1331	1411	1442	1343
27	30373	458	54	1	1	84	61	2300	10	1107	1328	1345	1262	1210	1169	1294	1164	1235
27	30373	458	54	1	1	88	58	1525	9	586	533	518	533	595	566	632	695	582
27	30373	458	54	1	1	89	60	2100	9	820	897	935	933	1043	1104	1035	1007	972
27	30373	458	54	1	1	92	62	2100	9	1696	1571	1585	1624	1480	1363	1450	1482	1531
27	30373	458	54	1	1	95	64	2500	10	1307	1415	1431	1468	1491	1486	1784	1508	1486
27	30373	458	54	1	1	104	59	1750	8	977	1033	822	871	932	954	902	944	929
27	30373	458	54	1	1	105	68	2400	12	1198	1274	1140	1121	1189	1154	1152	1194	1178
27	30373	458	54	1	1	114	51	1150	6	623	514	586	621	450	437	474	500	526
27	30373	458	54	1	1	119	57	1625	10	953	922	1002	1091	537	602	642	591	793
28	150373	451		1	2	361	59	1750	6	896	757	840	853	747	843	800	692	804
28	150373	451		1	2	362	58	1725	6	975	944	990	940	900	912	858	868	923
28	150373	451		1	2	363	67	2650	10	1115	1023	1088	1150	934	1158	1047	1138	1082
28	150373	451		1	2	364	64	2425	7	1205	1238	1256	1341	1170	1109	1103	1184	1201
28	150373	451		1	2	365	63	2375	7	1557	1499	1546	1404	1426	1556	1474	1370	1479
28	150373	451		1	2	366	52	1325	6	661	618	682	617	606	596	724	620	641
28	150373	451		1	2	369	48	975	5	481	411	349	379	377	357	315	342	376

28	150373	451	1	2	370	51	1150
28	150373	451	1	2	373	58	1800
28	150373	451	1	2	374	61	2000
28	150373	451	1	2	375	56	1550
28	150373	451	1	2	376	63	2250
28	150373	451	1	2	377	57	1600
28	150373	451	1	2	378	64	2500
28	150373	451	1	2	379	56	1500
28	150373	451	1	2	380	54	1400
28	150373	451	1	2	382	54	1400
28	150373	451	1	2	383	56	1550
28	150373	451	1	2	384	59	1700
28	150373	451	1	2	386	53	1400
28	150373	451	1	2	391	54	1500
28	150373	451	1	2	395	64	2325
28	150373	451	1	2	396	53	1275
28	150373	451	1	2	399	56	1800
28	150373	451	1	2	400	51	1550
28	150373	451	1	2	405	55	1575
28	150373	451	1	2	407	58	1725
28	150373	451	1	2	408	60	1950
28	150373	451	1	2	409	60	2100
28	150373	451	1	2	411	64	2450
28	150373	451	1	2	413	52	1300
28	150373	451	1	2	414	56	1450
28	150373	451	1	2	416	54	1500
28	150373	451	1	2	417	60	1775
28	150373	451	1	2	418	55	1375

5	575	561	555
6	729	787	721
6	1251	1177	1066
6	662	738	578
10	1157	1061	1227
6	622	718	832
9	1119	977	1114
7	1049	1096	1171
6	602	630	563
6	620	658	668
6	876	808	816
6	390	436	442
5	583	570	701
6	584	665	638
7	1086	999	995
5	781	829	754
8	770	720	751
5	605	520	494
6	714	675	644
7	899	936	909
5	878	937	905
7	925	953	974
8	1216	1104	1126
5	515	521	539
6	549	517	607
6	623	630	679
7	834	899	890
6	873	732	747

496	534	588	568	537	552
682	754	702	726	727	729
1070	1247	1281	1125	1108	1166
597	686	712	706	643	665
1232	1240	1249	1069	1085	1165
735	741	742	803	756	744
1079	1110	1213	1013	1078	1088
1046	1068	1004	1127	1131	1087
666	629	602	565	607	608
788	589	695	586	674	672
870	842	767	768	839	823
492	494	457	565	481	470
571	669	686	555	657	624
628	690	761	752	644	670
1153	1055	1026	1052	1163	1066
730	667	597	778	675	726
790	669	733	646	730	726
523	476	501	558	462	517
647	742	726	696	806	706
1002	919	928	958	1009	945
868	783	765	912	949	875
978	989	1075	970	924	974
1138	1156	1171	1171	1238	1165
525	581	594	627	609	564
591	638	605	539	571	577
607	745	764	746	737	691
900	1047	961	1019	1000	944
679	760	772	738	659	745

ANNEX 2

Inventory of data and results of haddock fecundity estimates for Div. 4X.

S.	Date	Area	Depth		Orig. S.	Fish	Len.	Weights				Age	Counts								
no.	D./M./Y.	code	fm.	Source	no.	no.	cm.	Round	GGI	GGO	Gonad		1	2	3	4	5	6	7	8	Ave
1	30269	463	60	1	1	12	55		1559			6	772	765	694	706	733	669	695	625	707
1	30269	463	60	1	1	38	53		1474			6	777	779	627	626	721	712	689	591	690
1	30269	463	60	1	1	84	52		1474			10	648	648	662	638	769	724	618	667	672
1	30269	463	60	1	1	129	50		1333			6	623	804	759	693	744	757	787	866	754
1	30269	463	60	1	1	140	59		1956			9	588	617	692	687	723	708	591	675	660
1	30269	463	60	1	1	143	57		1985			7	791	868	906	825	1081	1072	890	936	921
2	150269	463	90	1	2	160	51		1644			6	1265	1214	1113	953	1125	1218	1179	1138	1151
2	150269	463	90	1	2	168	59		2013			7	953	968	1034	1151	1136	976	780	777	972
2	150269	463	90	1	2	177	63		2182			10	1322	1309	1367	1419	1236	1316	1240	1308	1315
2	150269	463	90	1	2	182	56		1871			8	840	747	900	887	821	765	754	725	805
2	150269	463	90	1	2	190	56		1616			7	705	769	668	689	637	634	629	690	678
2	150269	463	90	1	2	196	57		1843			9	852	863	730	733	1001	954	813	824	846
2	150269	463	90	1	2	211	54		1616			8	448	437	531	450	548	524	472	429	480
2	150269	463	90	1	2	213	50		1191			7	407	430	386	414	344	324	345	388	380
2	150269	463	90	1	2	226	54		1531			6	745	803	804	736	662	646	729	675	725
2	150269	463	90	1	2	239	54		1531			8	574	562	586	634	512	551	564	477	558
2	150269	463	90	1	2	260	52		1503			7	628	776	600	724	660	728	637	592	668
2	150269	463	90	1	2	267	53		1474			6	877	809	811	798	911	814	782	793	824
2	150269	463	90	1	2	285	55		1729			9	846	747	917	820	809	771	713	659	785
2	150269	463	90	1	2	293	52		1191			6	686	601	630	704	789	815	560	535	665
2	150269	463	90	1	2	296	49		1162			6	384	332	400	482	623	480	531	515	468
3	70369	463	60	1	3	299	54		1503			6	867	846	816	796	765	779	796	794	807
3	70369	463	60	1	3	301	46		926			7	319	308	374	397	311	295	388	372	346
3	70369	463	60	1	3	303	49		964			6	394	360	370	363	435	398	410	433	395
3	70369	463	60	1	3	325	57		1644			8	786	929	674	652	623	778	728	708	735
3	70369	463	60	1	3	326	56		1644			7	456	375	525	514	540	610	541	470	504

3	70369	463	60	1	3	328	55	1531	6	423	396	376	410	430	460	288	307	386
3	70369	463	60	1	3	332	59	1644	10	1017	1018	922	804	940	969	1051	1057	972
3	70369	463	60	1	3	346	56	1531	7	713	688	728	712	548	515	644	606	644
3	70369	463	60	1	3	347	54	1588	9	458	554	636	540	694	700	578	527	586
3	70369	463	60	1	3	350	53	1389	6	801	741	706	739	665	602	665	609	691
3	70369	463	60	1	3	353	47	992	6	302	305	278	334	358	323	292	298	311
3	70369	463	60	1	3	358	49	1361	7	685	612	680	689	754	757	691	789	707
3	70369	463	60	1	3	365	50	1106	6	262	207	200	220	183	169	197	172	201
3	70369	463	60	1	3	366	48	1077	6	306	344	295	260	358	328	281	328	313
3	70369	463	60	1	3	369	52	1418	6	843	778	855	805	749	777	638	660	763
3	70369	463	60	1	3	377	61	2155	7	1079	989	1040	999	923	896	925	1031	985
3	70369	463	60	1	3	380	62	2155	8	798	775	996	898	779	763	699	787	812
3	70369	463	60	1	3	381	52	1304	6	662	760	904	774	681	755	775	647	745
3	70369	463	60	1	3	382	52	1247	6	504	533	518	572	476	524	625	570	540
3	70369	463	60	1	3	383	59	1758	11	473	410	518	527	746	687	577	667	576
3	70369	463	60	1	3	386	53	1531	6	749	781	821	888	768	824	847	816	812
3	70369	463	60	1	3	389	52	1531	5	560	583	651	664	657	739	714	713	660
3	70369	463	60	1	3	390	65	2268	10	738	873	893	975	862	836	825	790	849
3	70369	463	60	1	3	393	48	1106	7	380	400	335	378	314	369	448	347	371
3	70369	463	60	1	3	394	47	992	5	508	501	358	336	392	429	419	376	415
3	70369	463	60	1	3	399	56	1588	6	534	653	687	738	751	693	304	805	646
3	70369	463	60	1	3	400	65	2608	9	1321	1286	1181	1103	1209	1123	1314	1384	1240
3	70369	463	60	1	3	401	53	1644	7	367	410	496	520	375	416	447	484	439
3	70369	463	60	1	3	403	53	1446	6	493	512	460	489	556	492	524	491	502
3	70369	463	60	1	3	404	39	1361		446	460	385	372	382	466	389	435	417
3	70369	463	60	1	3	411	52	1418	6	476	460	463	504	516	545	560	548	509
3	70369	463	60	1	3	414	56	1956	6	922	781	711	638	712	868	846	811	786
3	70369	463	60	1	3	415	53	1503	6	375	426	498	428	426	408	491	534	448
3	70369	463	60	1	3	417	56	1729	6	1038	878	882	740	762	742	972	818	854
3	70369	463	60	1	3	421	43	680	6	208	222	187	184	171	183	169	208	192
3	70369	463	60	1	3	426	55	1503	6	710	638	685	715	692	729	717	746	704
3	70369	463	60	1	3	431	49	1247	6	143	176	206	195	212	221	179	222	194
3	70369	463	60	1	3	435	58	1588	9	536	591	709	578	551	563	621	666	602
3	70369	463	60	1	3	436	53	1503	6	556	644	675	655	669	688	654	624	646
3	70369	463	60	1	3	450	57	1673	6	557	650	726	706	601	647	756	774	677

4	200369	462	65	1	4	454	51	1162
4	200369	462	65	1	4	456	51	1191
4	200369	462	65	1	4	457	50	1333
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4	200369	462	65	1	4	474	48	1049
4	200369	462	65	1	4	476	48	1049
4	200369	462	65	1	4	477	55	1786
4	200369	462	65	1	4	478	52	1219
4	200369	462	65	1	4	479	48	992
4	200369	462	65	1	4	481	53	1503
4	200369	462	65	1	4	483	52	1191
4	200369	462	65	1	4	484	66	2835
4	200369	462	65	1	4	487	47	992
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4	200369	462	65	1	4	498	51	1106
4	200369	462	65	1	4	502	50	1304
4	200369	462	65	1	4	504	52	1418
4	200369	462	65	1	4	506	49	1049
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4	200369	462	65	1	4	515	54	1418
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4	200369	462	65	1	4	520	51	1191
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4	200369	462	65	1	4	524	58	1701
4	200369	462	65	1	4	526	53	1361
4	200369	462	65	1	4	529	55	1588
4	200369	462	65	1	4	530	58	1786
4	200369	462	65	1	4	531	54	1474
4	200369	462	65	1	4	545	56	1588
4	200369	462	65	1	4	549	54	1474

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7	506	531	502	416	404	555	391	447	469
6	485	473	421	529	458	484	471	496	477
7	423	520	569	459	584	539	670	682	556
6	591	692	669	594	529	616	519	519	591
6	512	606	408	497	445	627	463	531	511
7	667	582	463	557	542	558	549	463	548
6	369	560	351	364	365	357	443	477	411
7	698	712	795	829	539	572	564	622	666
6	431	452	421	487	418	417	404	435	433
6	441	355	392	445	400	373	365	372	393
6	637	646	526	580	644	587	623	578	603
6	494	562	455	525	514	519	510	421	500
9	1086	1295	1264	1122	1256	1180	1202	1157	1195
6	424	452	450	381	468	410	487	484	445
6	792	813	823	840	814	846	618	783	791
6	506	559	632	528	725	694	645	706	624
6	574	438	512	561	522	477	342	413	480
6	588	530	500	440	538	550	511	539	525
8	740	693	829	756	870	875	873	1018	832
6	517	496	445	446	386	469	528	400	461
6	1042	787	827	903	808	917	751	655	836
6	822	763	951	838	995	976	933	859	892
6	367	329	316	328	354	307	410	435	356
7	528	459	575	517	537	637	553	434	530
6	457	512	380	368	493	573	416	447	456
7	668	578	544	609	606	559	524	446	567
6	418	452	442	472	432	500	513	443	459
6	759	728	685	852	694	619	719	736	724
7	1020	787	884	931	763	927	643	750	838
6	774	821	710	709	735	713	882	887	779
6	729	813	880	887	695	619	575	610	726
7	557	576	647	665	670	660	796	697	659
7	660	591	774	765	600	695	547	491	640
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4	200369	462	65	1	4	550	55		1616		6	678	716	553	543	729	689	740	746	674
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4	200369	462	65	1	4	566	60		2155		6	780	681	797	822	835	886	867	779	806
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4	200369	462	65	1	4	569	49		1077		6	632	668	559	625	524	575	513	583	585
4	200369	462	65	1	4	570	54		1531		6	526	637	647	705	630	610	634	598	623
4	200369	462	65	1	4	579	52		1247		6	688	686	697	623	604	537	614	571	628
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4	200369	462	65	1	4	584	59		1843		6	708	686	838	970	745	800	794	839	798
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4	200369	462	65	1	4	587	55		1531		6	533	546	593	587	634	658	654	696	613
4	200369	462	65	1	4	588	61		2240		6	692	820	825	857	825	743	915	878	819
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7	250369	462	56	3	70	9	59	2420		187		859	1030	797	760	734	658	669	703	776
7	40469	463	74	4	204	14	61				9	2103	1939	1845	1906	1629	1307	1590	1477	1725
7	40469	462	64	4	208	25	56				7	1109	1096	1213	1105	1143	1076	1088	1038	1109
8	280270	463	80	1	1	4	57		1758		8	966	875	656	699	782	865	752	690	786
8	280270	463	80	1	1	5	53		1474		6	698	539	498	602	527	621	543	592	578
8	280270	463	80	1	1	9	51		1134		7	248	328	320	322	330	361	319	283	314
8	280270	463	80	1	1	10	58		1843		7	672	643	694	772	813	863	880	738	759
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8	280270	463	80	1	1	21	52		1474		7	656	602	559	568	509	582	602	527	576
8	280270	463	80	1	1	25	52		1701		7	569	534	470	483	656	691	608	606	577
8	280270	463	80	1	1	27	57		1758		8	753	803	718	697	682	676	664	710	713
8	280270	463	80	1	1	29	63		2353		10	1010	1150	1208	1269	977	937	1209	1282	1130
8	280270	463	80	1	1	32	54		1616		7	621	793	740	775	760	674	762	717	730
8	280270	463	80	1	1	35	52		1503		7	695	751	782	714	903	866	697	757	771
8	280270	463	80	1	1	36	54		1474		7	717	754	718	712	723	775	787	721	738
8	280270	463	80	1	1	47	56		1786		7	819	840	912	895	944	1047	1025	940	928
8	280270	463	80	1	1	49	54		1616		8	618	530	713	650	521	510	480	579	575

8	280270	463	80	1	1	54	55	1531		7	624	633	573	615	647	577	616	672	620
8	280270	463	80	1	1	55	53	1418		7	460	462	497	443	483	502	420	449	465
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8	280270	463	80	1	1	104	52	1389		7	689	776	798	724	700	762	810	714	747
8	280270	463	80	1	1	108	60	1815		7	815	707	889	759	549	732	721	705	735
8	280270	463	80	1	1	111	59	1758		8	666	677	706	581	748	668	800	811	707
8	280270	463	80	1	1	115	53	1247		7	257	202	174	206	270	255	232	255	231
8	280270	463	80	1	1	119	57	1928		8	587	650	742	698	803	646	763	726	702
9	150370	462	80	1	2	136	58	1588			629	664	618	709	748	800	710	679	695
9	150370	462	80	1	2	137	58	1588			796	704	677	685	633	662	660	729	693
9	150370	462	80	1	2	139	54	1333			352	321	319	338	284	336	392	346	336
9	150370	462	80	1	2	140	58	1644			862	774	832	838	696	710	702	620	754
9	150370	462	80	1	2	141	59	1786			673	651	755	745	726	723	771	668	714
9	150370	462	80	1	2	142	55	1418			553	526	548	489	598	590	550	670	566
9	150370	462	80	1	2	143	58	1701			907	893	817	876	643	668	727	675	776
9	150370	462	80	1	2	144	60	1616			640	595	697	725	669	655	693	697	671
9	150370	462	80	1	2	145	60	1871			709	770	813	753	642	627	660	663	705
9	150370	462	80	1	2	152	56	1106			485	503	429	491	465	437	467	448	466
9	150370	462	80	1	2	157	55	1162			806	724	703	652	729	747	641	722	716
9	150370	462	80	1	2	163	56	1559			496	541	540	572	510	506	594	516	534
9	150370	462	80	1	2	164	61	2041			620	599	753	686	708	620	685	599	659
9	150370	462	80	1	2	165	50	1021			118	120	105	132	131	151	127	146	129
9	150370	462	80	1	2	167	53	1304			426	390	462	530	410	496	498	463	459
9	150370	462	80	1	2	171	57	1644			671	756	584	525	651	651	625	592	632
9	150370	462	80	1	2	172	54	1361			587	559	581	580	551	544	491	591	561
9	150370	462	80	1	2	174	58	1644			690	665	862	843	797	830	880	792	795
9	150370	462	80	1	2	176	58	1786			691	711	622	643	671	637	669	678	665

9	150370	462	80	1	2	177	55		1418		591	524	549	577	521	532	621	700	577
9	150370	462	80	1	2	178	67		2580		1053	1040	928	922	1104	1178	1032	1038	1037
9	150370	462	80	1	2	184	58		1616		690	625	745	773	666	728	825	776	729
9	150370	462	80	1	2	189	54		1333		478	498	470	459	456	413	507	522	475
9	150370	462	80	1	2	190	56		1474		627	546	604	661	626	661	570	606	613
9	150370	462	80	1	2	193	53		992		154	144	161	198	172	210	169	192	175
9	150370	462	80	1	2	197	64		2013		793	825	877	831	894	854	1020	957	881
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9	150370	462	80	1	2	203	62		1871		820	696	739	782	718	776	634	664	729
9	150370	462	80	1	2	211	56		1531		551	613	607	559	621	586	578	500	577
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9	150370	462	80	1	2	219	57		1588		538	516	559	526	622	630	592	618	575
9	150370	462	80	1	2	222	57		1701		739	749	743	779	699	843	858	881	786
9	150370	462	80	1	2	223	63		2098		848	964	865	957	864	798	757	722	847
9	150370	462	80	1	2	224	56		1474		654	584	569	530	546	644	592	548	583
9	150370	462	80	1	2	226	52		1191		717	695	675	649	758	816	859	794	745
9	150370	462	80	1	2	227	55		1701		435	427	435	318	368	346	357	371	382
9	150370	462	80	1	2	228	51		1162		365	385	336	264	352	309	434	392	355
9	150370	462	80	1	2	229	55		1418		680	632	554	546	466	539	576	534	566
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9	150370	462	80	1	2	239	56		1474		584	605	564	543	571	598	547	595	576
9	150370	462	80	1	2	240	55		1418		544	608	581	656	579	674	658	675	622
9	150370	462	80	1	2	241	59		2013		880	838	901	1008	792	817	947	878	883
9	150370	462	80	1	2	242	53		1389		590	525	524	612	556	620	638	633	587
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9	150370	462	80	1	2	250	58		1786		516	569	565	522	479	541	592	557	543
9	150370	462	80	1	2	253	56		1644		646	681	677	684	544	620	687	686	653
9	150370	462	80	1	2	254	55		1389		675	773	736	724	717	699	864	787	747
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12	200370	462	57	2	41	1119	63	2600	
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6	460	425	669	630	509	667	648	741	632
7	524	669	683	661	560	475	451	502	576
7	762	511	1104	1164	1085	1174	1172	1126	1131
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7	592	613	589	566	595	591	567	720	603
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7	521	546	612	554	555	479	572	550	616
7	760	848	697	681	689	897	706	737	752
7	874	737	673	649	809	647	784	763	718
7	750	668	481	502	533	529	559	561	526
7	497	545	516	486	535	500	564	586	539
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7	1025	1086	1262	1200	1211	1139	888	908	1067
7	1014	913	1094	1227	1038	1025	891	956	1055
9	1024	1184	1225	1280	1138	1311	1133	988	1221
7	1281	1410	981	1108	1087	1139	1186	1128	1093
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7	1340	1214	1074	1141	1032	1100	1311	1102	1164
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6	384	426	413	445	444	427	430	460	429
7	300	274	319	374	256	317	344	308	312
4	247	188	257	230	190	254	262	264	237
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7	804	832	956	889	696	789	812	687	808
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7	504	476	607	520	490	566	454	519	517
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7	564	661	699	691	696	658	570	594	642
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7	752	779	690	534	642	586	644	578	651
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7	514	588	614	709	726	611	660	698	640
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8	630	603	585	625	516	554	625	627	596
7	671	793	679	628	722	647	625	694	682
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7	1223	1266	1282	1309	1399	1722	1449	1287	1367
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7	539	527	570	461	450	462	516	438	495
7	494	535	462	481	523	533	557	556	518
7	538	561	680	690	510	619	587	563	594
7	564	704	486	600	585	497	483	480	550
6	220	239	223	207	182	166	172	180	199
7	552	574	692	683	644	660	612	665	635
6	494	509	523	586	597	526	531	603	546
7	686	602	711	604	720	602	691	597	652
7	749	793	736	711	683	735	829	853	761
7	670	705	738	773	725	802	683	684	723
7	570	647	603	771	515	435	496	548	573
7	723	720	790	744	619	683	746	755	723

21	270371	462	52	2	34	634	61	2400	2150
21	270371	462	52	2	34	635	55	1950	1700
21	270371	462	52	2	34	637	55	1450	1350
21	270371	462	56	2	35	640	54	1850	1500
21	270371	462	56	2	35	642	59	2100	1850
21	270371	462	56	2	35	644	57	1800	1600
21	270371	462	56	2	35	645	66	3200	2600
21	270371	462	56	2	35	646	58	2000	1650
21	270371	462	56	2	35	647	57	2100	1700
21	270371	462	56	2	35	649	60	2250	1950
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21	270371	462	56	2	35	651	57	2050	1550
21	270371	462	56	2	35	652	61	2400	2100
21	270371	462	56	2	35	653	58	2150	1800
21	270371	462	56	2	35	654	53	1400	1200
21	270371	462	56	2	35	656	58	2100	1750
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21	270371	462	56	2	35	659	54	1800	1500
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21	270371	464	50	2	36	668	67	2650	2300
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21	270371	464	50	2	36	671	60	2250	1825
21	270371	464	50	2	36	674	59	2200	1800
21	270371	464	50	2	36	676	53	1500	1300
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21	270371	464	50	2	36	689	61	2675	2125
21	270371	464	50	2	36	690	66	3800	3100
21	270371	464	50	2	36	693	61	2350	1950
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21	270371	464	50	2	36	696	54	2000	1600
21	270371	464	50	2	36	704	58	2175	1900
21	270371	464	50	2	36	705	60	2350	1900

8	591	642	613	633	728	652	691	706	657
7	731	860	732	743	727	693	673	687	731
8	302	332	369	331	348	297	332	373	336
5	641	724	721	651	692	666	750	744	699
7	754	724	677	771	655	640	601	747	696
8	566	536	471	538	443	441	592	528	514
9	1599	1502	1392	1341	1532	1419	1405	1466	1457
8	855	827	715	746	734	847	702	702	766
8	505	517	485	625	655	558	490	594	554
8	718	712	702	571	667	558	538	580	631
8	562	594	464	391	558	625	556	447	525
8	691	615	553	604	742	729	633	623	649
8	1042	1205	1105	1074	1119	1021	1012	937	1064
8	751	762	722	797	674	787	838	730	758
5	317	348	295	280	281	267	272	316	297
7	484	476	486	511	507	463	558	465	494
7	547	524	576	556	592	620	567	590	572
8	471	595	567	476	474	471	502	539	512
6	327	303	300	398	366	348	318	327	336
6	545	568	495	549	660	569	568	527	560
8	376	346	296	356	334	348	297	267	328
9	1037	944	973	1027	1036	1114	1206	1098	1054
8	585	529	695	583	744	610	730	639	639
8	704	714	838	865	733	801	880	865	800
6	578	561	589	538	552	604	522	554	562
8	678	730	643	663	696	645	737	693	686
8	767	837	804	811	716	709	843	838	791
8	799	892	815	888	762	721	850	686	802
8	922	1057	1033	1086	1116	1078	1080	1059	1054
8	1305	1448	1425	1375	1419	1523	1494	1421	1426
8	588	630	616	567	644	603	726	676	631
8	1048	881	976	1030	955	1190	1094	1052	1028
7	546	581	501	525	562	536	561	559	546
8	498	666	633	657	632	564	606	641	612
8	758	780	750	741	768	860	922	567	768

21	270371	464	50	2	36	707	58	2200	1800	8	619	663	485	552	611	627	462	517	567
21	270371	464	50	2	36	708	54	1600	1400	5	502	520	494	546	577	565	589	628	553
21	270371	464	50	2	36	709	47	1100	975	5	427	419	362	349	359	423	379	415	392
21	270371	464	50	2	36	710	57	2050	1750	8	649	640	610	611	631	731	572	670	639
21	270371	464	50	2	36	715	57	2250	1900	9	752	708	638	751	632	652	530	527	649
21	270371	464	50	2	36	716	62	2750	2200	7	836	864	939	903	959	864	911	885	899
21	270371	464	50	2	36	724	56	2100	1800	8	422	426	536	451	384	472	470	478	455
21	270371	464	50	2	36	731	61	2300	1950	8	690	653	740	730	651	625	703	760	694
21	270371	464	50	2	36	732	58	2100	1725	7	775	760	879	892	854	942	1033	923	882
21	270371	464	50	2	36	743	60	2400	2000	8	836	799	620	800	721	671	733	770	744
21	270371	464	50	2	36	745	67	3600	3000	9	927	935	988	931	905	866	912	888	919
21	270371	464	50	2	36	746	59	2350	2000	8	710	780	713	747	805	616	803	867	755
21	270371	464	50	2	36	749	59	2250	1800	9	531	691	575	648	777	762	698	781	683
21	270371	464	50	2	36	752	61	2500		8	916	944	1000	929	902	907	1031	914	943
21	270371	464	50	2	36	756	55	1800	1600	8	430	384	377	357	365	389	342	351	374
21	270371	464	50	2	36	760	63	2700	2200	9	678	606	709	748	749	864	746	729	729
21	270371	464	47	2	37	769	57	2200	1950	8	706	785	772	801	750	717	744	737	752
21	270371	464	47	2	37	775	57	1925	1700	8	717	655	711	717	620	598	670	693	673
21	270371	464	47	2	37	780	64	2950	2400	8	899	854	838	926	1043	907	1005	909	923
21	270371	464	47	2	37	786	57	1975	1625	8	658	641	583	627	645	540	645	554	612
21	270371	464	47	2	37	791	59	2500	1950	8	1181	1112	1114	1095	1074	1033	1076	1131	1102
21	270371	464	47	2	37	796	61	2550	2125	9	922	929	918	957	879	802	750	838	874
21	270371	464	47	2	37	797	55	1950	1600	7	564	560	605	620	609	632	659	788	630
21	270371	464	47	2	37	801	55	1850	1500	8	569	632	511	506	525	537	488	488	532
21	270371	464	47	2	37	804	68	2900	2400	8	981	1130	1059	1092	1104	1152	1073	1106	1087
21	270371	464	47	2	37	807	57	2100	1750	8	1009	963	1035	1033	1084	1046	1007	1130	1038
21	270371	464	47	2	37	809	67	3100	2600	8	627	602	803	806	783	835	875	871	775
21	270371	464	47	2	37	813	60	2300	1850	8	807	775	747	669	735	639	802	768	743
21	270371	464	47	2	37	820	54	1450	1250	5	417	442	432	433	431	428	386	431	425
21	270371	464	47	2	37	863	51	1200	1050	5	302	287	289	274	289	281	275	283	285
24	100372	462	65	2	23	806	55	1900	1750	6	722	653	746	789	757	798	680	826	746
24	100372	462	65	2	23	813	53	1600	1500	5	611	632	627	600	642	591	596	601	613
24	100372	462	65	2	23	814	56	1900	1750	6	905	854	828	831	756	888	796	837	837
24	100372	462	65	2	23	820	64	2700	2500	6	707	734	717	604	764	781	741	819	733
24	100372	462	65	2	23	827	55	1900	1700	5	767	746	751	734	840	827	912	919	812

24	100372	462	65	2	23	829	59	2400	2200
24	100372	462	65	2	23	843	65	3400	3000
24	100372	462	65	2	23	845	63	2650	2400
24	100372	462	65	2	23	851	56	1900	1600
24	100372	462	65	2	23	861	59	2200	1850
24	100372	462	65	2	23	862	56	2000	1600
24	100372	462	65	2	23	863	56	1800	1500
24	100372	462	65	2	23	873	65	3000	2500
24	100372	462	65	2	23	901	44	1000	900
24	100372	462	65	2	23	903	44	950	925
24	100372	462	71	2	24	944	61	3000	2900
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24	100372	462	71	2	24	950	52		
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24	100372	462	71	2	24	964	58	2200	2100
24	100372	462	71	2	24	965	59	2850	2600
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24	100372	462	71	2	24	967	57	2350	2200
24	100372	462	71	2	24	968	65	2750	2550
24	100372	462	71	2	24	970	51	1500	1400
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6	429	435	473	343	477	383	473	423	430
8	1103	1053	1000	893	1018	911	961	1021	995
6	1074	1034	1067	1065	1042	1017	1039	1105	1055
6	695	683	718	666	693	625	826	686	699
8	1033	1020	1161	1237	1065	1137	964	985	1075
6	962	1034	929	1017	965	878	987	941	964
6	625	569	540	460	534	571	567	572	555
9	1295	1360	1372	1299	1245	1163	1250	1261	1281
4	280	293	280	312	280	269	286	244	281
4	416	426	471	512	400	432	392	436	436
7	1186	1392	1574	1501	1327	1341	1637	1468	1428
9	686	650	735	564	629	799	623	613	662
7	667	724	700	656	716	621	623	602	664
6	1071	966	920	872	874	778	921	978	923
7	1327	1276	1340	1346	1119	1178	1341	1330	1282
5	723	719	707	628	852	816	826	811	760
5	524	533	623	544	619	599	547	607	575
5	394	440	366	381	394	377	410	358	390
8	787	743	879	912	707	810	765	721	791
4	686	709	668	695	632	646	571	603	651
7	881	1060	987	822	1028	1022	1040	985	978
5	540	520	508	488	548	489	527	537	520
6	713	700	843	712	784	739	771	750	752
9	719	717	709	775	790	809	755	765	755
8	828	775	869	842	967	934	839	940	874
	1211	1215	1176	1154	1304	1217	1250	1427	1244
4	917	898	820	767	794	976	829	844	856
6	768	811	851	759	846	782	800	812	804
9	1607	1679	1576	1620	1527	1562	1696	1641	1614
6	691	687	726	724	639	643	598	678	673
9	1210	1174	1195	1168	1109	1172	1136	1101	1158
5	772	736	851	842	647	613	707	678	731
9	1082	927	1018	1015	1007	1045	967	1082	1018
9	1173	1366	1191	1265	1302	1364	1298	1250	1276
4	862	678	941	921	798	843	687	809	817
7	600	580	532	571	524	538	530	462	542

24	100372	462	71	2	24	972	61	2650	2350
24	100372	462	71	2	24	973	54	1850	1550
24	100372	462	71	2	24	974	55	2000	1700
24	100372	462	71	2	24	975	53	1950	1600
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24	100372	462	71	2	24	980	51	1500	1350
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7	1408	1331	1280	1302	1441	1297	1323	1487	1359
4	870	854	866	801	738	747	687	692	782
5	644	672	627	649	578	583	595	601	619
7	778	758	786	751	671	761	663	742	739
5	721	691	717	732	610	651	613	703	680
5	639	634	643	637	579	699	525	570	616
7	815	804	748	765	844	760	844	711	786
6	933	794	820	839	798	757	747	717	801
4	759	753	764	737	677	735	729	767	740
5	632	561	518	502	519	518	552	499	538
6	1077	965	950	1036	1018	1162	1028	1193	1054
6	880	832	854	897	813	911	918	1017	890
6	1266	1148	1043	1168	987	1106	1092	1041	1106
4	614	628	594	775	690	653	724	715	674
6	1131	1026	1117	1281	1263	1343	1146	1410	1215
5	621	654	655	644	730	749	725	765	693
7	1455	1559	1358	1551	1484	1399	1323	1479	1451

26	180372	462		3	161	1	58	2315		104										1673
26	180372	462		3	161	3	60	2821		107										1373
26	180372	462		3	161	4	64	3520		139	9									1235
26	180372	462		3	161	7	63	3120		111	9									929
26	180372	462		3	161	9	55	2216		67	6									747
26	180372	462		3	161	11	52	1760		74										386
26	180372	462		3	161	12	52	2110		81	5									1071
26	180372	462		3	161	15	68	3650		164										1821
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26	180372	462		3	161	20	55	2235		38										540
26	180372	462		3	161	26	45	1630		46	4									166
26	180372	462		3	161	40	61	3055		197	6									1243
26	200472	464		4	279	1	60			311	9									1816
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26	200472	462		4	282	1	45			80	3									311
26	200472	462		4	282	20	65			304										1571
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26	200472	462		4	282	29	64			218										1402

26	200472	462	4	282	35	61		222												945
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29	90373	460	1	3	201	68			10	1640	1508	1578	1456	1428	1428	1447	1333	1477
29	90373	460	1	3	203	55	1450		7	1168	1064	1012	1169	1081	1152	1178	1102	1116
29	90373	460	1	3	205	47	725		4	451	361	369	388	370	376	357	418	386
29	90373	460	1	3	206	52	1100		5	190	154	191	152	192	165	184	165	174
29	90373	460	1	3	207	49	1075		4	608	561	624	626	598	547	559	555	585
29	90373	460	1	3	208	47	900		4	723	652	643	677	742	730	842	797	726
29	90373	460	1	3	222	50	1100		4	555	699	677	662	682	634	661	705	659
29	90373	460	1	3	225	46	950		4	339	410	348	423	453	470	425	407	409
29	90373	460	1	3	230	46	875		4	364	396	354	348	345	376	417	402	375
29	90373	460	1	3	232	47	865		4	358	343	383	373	348	359	434	357	369
29	90373	460	1	3	239	57	1575		5	793	737	743	732	662	784	707	704	733
29	90373	460	1	3	240	58	1750		5	714	685	781	678	637	545	730	679	681
29	90373	460	1	3	242	61	1725		6	832	949	911	942	855	889	987	997	920
29	90373	460	1	3	244	60	1925		6	870	877	1032	906	728	722	804	895	854
29	90373	460	1	3	245	55	1625		6	419	457	422	418	492	494	442	452	450
29	90373	460	1	3	248	64	2525		7	1103	1175	1103	1134	1041	1117	1066	1049	1099
29	90373	460	1	3	249	65	2450		7	1065	1088	929	902	1078	1000	1057	1075	1024
29	90373	460	1	3	251	64	2300		7	1581	1610	1432	1481	1518	1565	1448	1463	1512
29	90373	460	1	3	252	59	2000		7	1037	904	1158	1151	1169	1160	1209	1164	1119
29	90373	460	1	3	254	57	1625		6	822	838	914	885	817	753	1009	909	868
29	90373	460	1	3	256	61	2125		7	982	989	1012	1000	911	966	1019	930	976
29	90373	460	1	3	257	58	1725		6	809	951	903	943	982	968	1000	918	934
29	90373	460	1	3	258	54	1400		5	726	720	811	885	713	763	779	813	776
29	90373	460	1	3	260	63	2525		6	1029	1131	1009	989	898	940	957	907	983
29	90373	460	1	3	262	54	1300		5	958	930	998	1041	1086	1022	1021	928	998
29	90373	460	1	3	264	56	1525		5	823	896	966	920	924	865	847	908	894
29	90373	460	1	3	265	58	1825		6	598	545	616	583	732	573	688	623	620
29	90373	460	1	3	266	56	1550		6	893	845	907	818	858	855	793	834	850
29	90373	460	1	3	267	61	2200		10	1186	1284	1163	1181	1032	1070	1106	1128	1144
29	90373	460	1	3	270	57	1775		6	1185	1338	1164	1146	1059	1111	1080	1000	1135
29	90373	460	1	3	271	56	1650		5	764	755	719	715	713	693	657	678	712
29	90373	460	1	3	272	65	2600		7	1205	1131	1284	1276	1267	1243	1225	1143	1222

29	90373	460	1	3	275	58		1725		5	979	997	963	948	905	851	896	891	929
29	90373	460	1	3	278	61		2325		7	1074	1090	1168	1173	1214	1229	1158	1231	1167
30	70273	462	3	169	1	58	2010		87	5									919
30	70273	462	3	169	3	56	2200		136	5									1077
30	70273	462	3	169	6	69	3650		247	10									1758
30	70273	462	3	169	8	55	1770		68	5									788
30	70273	462	3	169	12	59	2550		145	10									824
30	70273	462	3	169	13	60	2450		212	5									1513
30	70273	462	3	169	16	54	1640		41	4									731
30	70273	462	3	169	17	61	2390		103	7									973
30	70273	462	3	169	18	61	2400		104	5									981
30	70273	462	3	169	19	62	2500		128	5									1270
30	70273	462	3	169	20	54	2000		182	7									1557
30	70273	462	3	169	21	50	1590		51	4									512
30	70273	462	3	169	22	66	2850		120	10									950
30	70273	462	3	169	27	49	1350		45	4									307
30	70273	462	3	169	28	47	1270		50	4									585
30	70273	462	3	169	29	68	3210		154	10									1297
30	70273	462	3	169	30	63	2720		171	7									1252
30	70273	462	3	169	31	54	1770		88	5									605
30	70273	462	3	169	32	62	3500		100	10									1357
30	70273	462	3	169	33	71	3850		351	10									2059
30	70273	462	3	169	36	68	3330		169	10									1067
30	70273	462	3	169	38	68	3890		232	10									1574
30	70273	462	3	169	39	69	3920		149	10									992
30	70273	462	3	169	40	68	3370		156	10									1429
30	70273	462	3	169	42	69	3280		230	10									1544
30	70273	462	3	169	43	66	3135		281	9									1710
30	70273	462	3	169	44	58	2180		127	10									1412
30	70273	462	3	169	45	65	2980		182	7									1260
30	70273	462	3	169	48	59	2130		70	5									834
30	70273	462	3	169	49	66	3150		171	11									1734
30	70273	462	3	169	63	70	3820		261	14									2098
30	70273	462	3	169	66	58	2010		75	5									617
30	70273	462	3	169	67	60	2480		97	5									722

30	70273	462	3	169	69	58	2130	91		1134
30	140273	464	3	170	1	60	3250	211	10	1546
30	140273	464	3	170	2	56	2110	89		981
30	140273	464	3	170	7	56	2100	104	4	1235
30	140273	464	3	170	10	70	4430	343	10	2465
30	140273	464	3	170	11	57	2040	151		1340
30	140273	464	3	170	12	53	1570	78	4	855
30	140273	464	3	170	15	61	2530	146	4	1433
30	140273	464	3	170	19	52	1660	78	4	764
30	140273	464	3	170	20	57	2780	151	10	1340
30	140273	464	3	170	22	69	4180	318		1924
30	140273	464	3	170	26	65	2780	238	5	1908
30	140273	464	3	170	27	60	2340	111	4	1151
30	140273	464	3	170	29	63	2960	243	10	1421
30	140273	464	3	170	39	73	4340	268	13	2678
30	140273	464	3	170	40	65	3010	182	7	1407
30	140273	464	3	170	50	52	1810	87	4	1046
30	140273	464	3	170	57	60	2500	90	7	1181
30	140273	464	3	170	58	65	3700	207	10	1937
30	140273	464	3	170	59	70	4440	315	10	2318
30	140273	464	3	170	60	64	3530	148	10	1705
30	140273	464	3	170	61	59	2450	97	4	1431

ANNEX 3

Inventory of data and results of haddock fecundity estimates for SA5.

S.	Date	Area	Depth		Orig. S.	Fish	Len.	Weights				Age	Counts								
no.	D./M./Y.	code	fm.	Source	no.	no.	cm.	Round	GGI	GGO	Gonad		1	2	3	4	5	6	7	8	Ave
6	170369	521	87	3	67	8	67	3260			230		803	836	716	843	885	797	974	963	852
6	170369	521	87	3	67	18	62	2750			410	6	970	1120	963	736	1077	971	923	932	962
6	170369	521	87	3	67	28	60	2523			226		934	816	710	722	878	781	818	849	814
6	170369	521	87	3	67	31	64	3033			212		930	1024	705	991	825	1030	732	731	871
6	170369	521	87	3	67	36	66	2863			240	6	606	841	805	656	800	656	651	664	710
6	170369	521	87	3	67	66	63	2750			174	6	836	726	795	811	610	656	625	694	719
6	170369	521	87	3	67	78	62	2835			296	6	810	920	732	843	930	964	981	883	883
6	170369	521	87	3	67	87	73	4734			322		1351	1289	1172	1237	1271	1304	1240	951	1227
6	170369	521	87	3	67	99	62	2835			261	7	816	810	843	806	429	390	346	318	595
6	240369	523	105	3	68	22	60	3112			172		1288	1131	1116	1082	915	978	1091	935	1067
6	240369	523	105	3	68	23	69	2338			165		503	427	478	491	429	457	445	463	462
6	240369	523	105	3	68	28	53	1704			135		325	360	366	385	440	440	430	341	386
6	240369	523	105	3	68	34	56	2145			164		751	907	1026	1013	669	684	631	707	799
6	240369	523	105	3	68	42	53	1765			198		1349	1424	1257	1176	1248	1064	975	959	1182
6	240369	523	105	3	68	61	49	1442			93		329	435	401	440	378	280	263	305	354
6	240369	523	105	3	68	79	49	1372			158		517	457	496	390	374	434	377	440	436
6	240369	523	105	3	68	83	60	2740			298		1335	1032	1373	1241	1254	1164	926	1054	1172
6	240369	523	105	3	68	88	61	3350			428		1172	1231	1200	1190	1224	1306	1194	1089	1201
6	240369	523	105	3	68	115	63	3194			228		609	635	728	692	490	379	452	514	562
6	240369	523	105	3	68	141	61	3090			436		1348	1215	1097	1262	1498	1604	1581	1285	1361
6	230369	524	32	3	69	13	64	2750			170	6	999	956	835	764	771	659	792	705	810
6	230369	524	32	3	69	29	68	4082			351	6	1389	1286	1542	1263	1069	1122	1151	1103	1241
6	310369	524	33	3	71	30	66	3809			288	6	785	972	1187	1016	921	823	772	831	913
6	310369	524	33	3	71	32	61	2910			152		335	483	350	285	333	363	450	343	368
6	300369	524	46	3	72	67	59	2500			143	6	523	516	372	435	406	548	473	373	456
6	300369	524	46	3	72	78	50	1497			92		589	498	558	400	448	444	461	459	482
6	10469	522	17	3	73	20	65	3660			195	6	891	942	779	698	955	1053	1030	1084	929
6	10469	522	17	3	73	40	63	3770			127	6	214	234	239	166	175	407	222	214	234
6	10469	522	17	3	73	43	63	3762			249	7	1175	1062	1028	900	987	1069	878	1083	1023

6	10469	522	17	3	73	81	60	2609
6	40469	524	32	3	75	3	63	3260
6	40469	524	32	3	75	6	65	3175
6	40469	524	32	3	75	46	53	1814
6	40469	524	32	3	75	69	68	4111
6	40469	524	30	3	76	6	48	1219
6	40469	524	30	3	76	70	56	1956
6	90469	523	34	3	77	1	67	3712
6	90469	523	34	3	77	53	50	1592
6	90469	523	34	3	77	66	55	1712
6	140469	523	37	3	79	22	55	2000
6	140469	523	37	3	79	32	45	1210
6	140469	523	37	3	79	74	58	2480
6	140469	523	37	3	79	75	63	3500
6	140469	522	85	3	81	6	54	2040
6	140469	522	85	3	81	7	51	1640
6	200469	522	80	3	82	4	49	1540
6	200469	522	80	3	82	24	65	3430
6	220469	523	30	3	84	4	48	1382
6	220469	523	30	3	84	24	64	3082
6	270469	524	17	3	85	25	52	1719
6	190369	526	80	4	110	2	67	
6	220369	525	28	4	116	5	53	
6	220369	525	28	4	116	7	61	
6	220369	525	28	4	116	14	64	
6	220369	525	28	4	116	15	65	
6	270369	525	27	4	117	3	72	
6	220369	525	36	4	119	13	57	
6	230369	524	30	4	131	2	68	
6	230369	524	30	4	131	4	68	
6	230369	525	32	4	132	2	70	
6	230369	525	32	4	132	29	65	
6	240369	523	68	4	146	1	54	
6	240369	523	68	4	146	2	60	
6	240369	523	68	4	146	3	58	
6	240369	523	68	4	146	4	65	

136	7	453	324	470	316	406	380	383	373	388
222	6	555	520	485	480	629	519	510	522	528
298	6	727	682	756	689	745	688	866	901	757
187	6	829	704	696	592	609	601	567	547	643
442		1108	1134	1043	1112	945	872	919	862	999
102	6	291	249	255	239	283	308	265	222	264
181	6	444	485	420	529	355	424	481	469	451
311	6	1272	1128	1205	940	1146	1223	904	1092	1114
78	3	138	140	134	182	164	192	180	191	165
117	6	368	403	349	301	296	336	263	278	324
133	6	754	722	693	592	612	704	553	583	652
128	6	413	371	399	434	353	355	381	356	383
287		929	763	736	675	900	947	811	884	831
347	6	1253	1135	1180	1127	1215	1105	1101	1047	1145
148	5	489	510	428	516	485	477	415	488	476
165	6	355	379	318	315	348	367	396	411	361
116	7	397	457	421	418	382	407	254	269	376
253	7	958	989	1018	1062	816	774	808	722	893
	6	113	109	114	113	126	150	92	109	116
	6	284	270	252	192	335	334	320	360	293
102	4	538	442	445	442	455	396	365	408	436
357	6	1147	1181	1042	966	1014	1054	1143	1145	1087
195	6	813	847	763	744	776	705	660	676	748
503	6	1073	1032	998	926	982	967	982	1085	1006
422	6	893	1000	957	861	910	967	766	773	891
549	6	1335	1238	1075	1178	1375	1396	1100	1128	1228
580	10	1944	1675	1844	1772	1756	1511	1802	1765	1759
237	6	1069	946	780	712	709	810	789	816	829
496	6	817	798	753	671	552	634	674	567	683
380		901	892	934	830	861	1079	820	828	893
342	8	577	488	557	559	655	563	485	444	541
375	6	960	906	763	825	1243	972	789	913	921
172	6	408	499	384	530	435	440	424	428	444
371	6	899	902	857	873	1048	937	895	721	892
290	6	1238	1158	1033	1067	955	1017	895	921	1036
195	6	1388	1513	1215	1349	1182	1041	1284	1151	1265

6	240369	523	68	4	146	5	59	
6	240369	523	68	4	146	6	53	
6	240369	524	45	4	149	1	57	
6	260369	523	35	4	165	2	61	
6	280369	525	22	4	184	9	76	
6	280369	522	32	4	185	1	49	
6	280369	522	32	4	185	2	56	

13	200370	523	113	2	45	1458	54	1700
13	200370	523	113	2	45	1459	62	2000
13	200370	523	113	2	45	1461	56	2200
13	200370	523	113	2	45	1466	56	1800
13	200370	523	113	2	45	1467	68	4000
13	200370	523	113	2	45	1470	57	2300
13	200370	523	113	2	45	1471	52	1500
13	200370	523	113	2	45	1472	54	1800
13	200370	523	113	2	45	1474	54	1900
13	200370	523	113	2	45	1475	54	1800
13	200370	523	113	2	45	1476	55	1700
13	200370	523	113	2	45	1477	58	2000
13	200370	523	113	2	45	1478	52	1500
13	200370	523	113	2	45	1479	52	1500
13	200370	523	113	2	45	1483	51	1650
13	200370	523	113	2	45	1484	59	2500
13	200370	523	113	2	45	1485	53	1550
13	200370	523	113	2	45	1486	57	2050
13	200370	523	113	2	45	1487	60	2750
13	200370	523	113	2	45	1488	54	1800
13	200370	523	113	2	45	1489	59	2350
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13	200370	523	113	2	45	1492	60	2400
13	200370	523	113	2	45	1496	54	1425
13	200370	523	113	2	45	1499	60	2100
13	200370	523	113	2	45	1501	46	925

328		846	885	859	897	1041	854	857	689	866
206		659	687	788	560	615	516	475	580	610
285	6	692	727	893	826	788	786	670	752	767
236	6	703	681	607	660	660	611	591	490	625
585	10	1137	1074	1140	966	1370	1291	1000	1183	1145
191		490	478	522	424	429	416	437	410	451
237		637	593	613	594	543	596	649	526	594

6	519	546	526	565	494	514	458	481	513
9	868	916	812	881	844	948	975	1097	918
8	858	860	813	854	999	887	937	957	896
7	453	512	462	466	455	461	522	537	484
8	1595	1518	1570	1725	1844	1968	2003	1850	1759
7	884	1015	1078	1008	775	896	682	867	901
6	572	488	602	508	461	569	546	504	531
8	802	842	920	881	685	748	1024	827	841
5	718	682	679	719	1054	922	834	789	800
6	781	697	852	722	792	816	731	800	774
5	454	422	479	437	473	435	445	459	451
8	672	732	677	776	592	609	708	620	673
7	417	507	459	463	463	473	534	487	475
7	744	650	787	713	686	556	637	586	670
7	614	693	595	655	518	689	559	511	604
7	1209	1366	1429	1497	1161	1253	1252	1226	1299
7	414	363	396	375	465	506	364	383	408
7	672	578	707	642	594	574	606	650	628
8	1658	1505	1567	1584	1408	1421	1390	1425	1495
7	542	562	649	651	524	443	480	484	542
7	1026	997	1085	1085	1002	928	936	828	986
7	799	978	1063	999	960	918	759	814	911
7	671	562	568	532	538	529	572	526	562
7	1007	864	1000	930	878	868	794	887	904
6	667	584	513	593	645	598	533	569	588
7	814	999	940	966	996	976	787	793	909
5	294	294	272	290	268	258	301	293	284

14	220270	521	19	3	96	11	65	331	7	1454	1637	1381	1256	1378	1497	1720	1686	1501
14	220270	521	19	3	96	13	71	272	7	1243	1045	1219	1179	1370	1247	1148	1070	1190
14	240270	521	22	3	98	13	67	465	8	1499	1422	1346	1652	1276	1304	1613	1524	1455
14	240070	521	22	3	98	15	66	254	8	941	913	812	936	734	765	776	926	850
14	240070	521	22	3	98	18	59	206	7	994	1178	1046	1223	1053	1230	980	1044	1094
14	240070	521	22	3	98	21	63	261	7	1122	1180	1132	1216	1169	1295	1164	1187	1183
14	240070	521	22	3	98	23	64	313	7	1070	1037	983	949	1110	1256	804	890	1012
14	240070	521	22	3	98	26	60	169	7	962	1087	1048	1114	1272	1203	1272	1136	1137
14	240270	521	22	3	98	38	63	388	7	822	976	925	958	775	1081	964	901	925
14	30370	521	25	3	100	4	56	188	7	933	982	774	765	1140	896	1015	1028	942
14	30370	521	25	3	100	6	58	208	7	694	649	740	611	734	689	692	581	674
14	30370	521	25	3	100	17	66	378	9	1660	1572	1587	1670	1702	1514	1725	1592	1628
14	70370	521	20	3	104	5	66	372	9	1272	1341	1406	1390	1563	1466	1490	1496	1428
14	70370	521	20	3	104	9	69	530	8	1045	1208	1366	1307	1344	1303	1243	1241	1257
14	70370	521	20	3	104	26	66	537	7									1751
15	210270	524	34	3	97	1	70	272	7	1044	1124	1268	1317	1370	1423	1209	1203	1245
15	210270	524	34	3	97	11	64	214	8	1779	1331	1119	1205	1339	1154	1232	1342	1313
15	210270	524	34	3	97	12	69	289	7	1565	1426	1424	1463	1421	1514	1764	1787	1546
15	210270	524	34	3	97	13	68	470	9									2400
15	210270	524	34	3	97	24	56	133	7	649	684	727	769	525	582	620	713	659
15	210270	524	34	3	97	25	63	135	7	977	1153	1012	1108	1204	1190	1128	1222	1124
15	210270	524	34	3	97	41	67	294		899	804	814	846	703	681	712	706	771
15	210270	524	34	3	97	48	58	314		1292	1356	1300	1276	1491	1575	1358	1745	1424
15	210270	524	34	3	97	53	62	294		922	895	1009	878	974	982	882	834	922
15	280270	523	116	3	99	1	60	100	7	819	887	804	817	613	723	678	708	756
15	280270	523	116	3	99	2	54	110	7	429	405	511	498	503	551	414	464	472
15	280270	523	116	3	99	9	54	99	7	917	685	617	692	732	726	940	916	778
15	280270	523	116	3	99	27	54	128	8	715	662	564	612	713	731	648	633	660
15	280270	523	116	3	99	30	66	284	7	1398	1292	1316	1483	1358	1331	1429	1544	1394
15	280270	523	116	3	99	34	61	286	4	1315	1112	1004	1001	950	1084	1085	1086	1080
15	280270	523	116	3	99	38	63	257	7	1814	1724	1664	1541	1641	1677	1889	1678	1704
15	280270	523	116	3	99	55	62	158		958	707	761	783	864	897	965	799	842
15	280270	523	116	3	99	60	70	287		2105	1974	2194	2093	1880	2310	2415	2403	2172
15	280270	523	116	3	99	69	65	232		1304	1415	1300	1427	1272	1342	1610	1284	1369
15	280270	523	116	3	99	81	63	178		1308	1463	1693	1583	1375	1484	1268	1203	1422

15	280270	523	116	3	99	89	59	
15	280270	523	116	3	99	100	63	
15	20370	524	31	3	101	4	69	
15	20370	524	31	3	101	5	62	
15	20370	524	31	3	101	6	66	
15	20370	524	31	3	101	15	62	
15	20370	524	31	3	101	22	66	
15	20370	524	31	3	101	24	62	
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15	140370	523	97	3	106	68	57	
15	140370	523	97	3	106	75	55	
22	150371	525	46	4	53	2	87	
22	220371	523	91	4	92	29	61	
22	220371	523	91	4	92	31	60	
22	240371	521	85	4	110	3	65	
22	110171	523	38	3	124	11	65	3880
22	160171	524	44	3	126	12	77	6570
22	160171	524	44	3	126	18	69	4850
22	160171	524	44	3	126	32	53	1950

286		1116	1274	1073	1097	1132	1406	1091	1108	1162
178		1190	1533	1036	1052	1085	1009	1178	1206	1161
299	8	1630	1557	1484	1555	1249	1330	1461	1454	1465
295	7	1168	1176	1333	1225	1130	1154	1274	1245	1213
357	7	1298	1415	1444	1488	1424	1424	1413	1682	1449
248	7	1247	1418	1374	1191	1216	1346	1146	1480	1302
546	9	2168	1953	2309	2521	2251	2306	2076	2167	2219
349	5	1359	1301	1181	1405	1647	1580	1549	1565	1448
497	7	1574	1525	1312	1149	1409	1415	1224	1327	1367
75	7	468	530	484	523	389	472	541	521	491
167	7	760	865	843	801	934	880	923	907	864
188	7	856	863	895	807	778	665	864	800	816
268	8	1079	1058	851	929	981	1235	976	948	1007
187	10	1559	1574	1656	1708	1330	1509	1356	1539	1529
256	7	1274	1473	1267	1312	1128	1027	1023	978	1185
79	7	682	691	656	588	554	467	625	545	601
42		305	276	333	354	294	367	309	290	316
211	7	874	1053	899	1063	993	984	1029	945	980
372	7	1644	1565	1688	1670	1599	1643	1518	1539	1608
131		777	881	688	686	627	589	685	702	704
103	7	989	1088	970	978	1324	1162	1110	1063	1086
75	7	552	586	535	632	507	417	506	447	523
	8	941	819	959	977	969	1072	967	968	959
143	7	440	564	503	483	483	494	430	478	484
212	4	987	991	1159	1111	1017	1049	1055	1021	1049
179	7	698	719	677	753	741	781	675	721	721
208	7	934	931	975	1043	837	832	857	857	908
										1547
	9	666	590	623	550	696	672	738	700	654
	5	639	687	555	550	678	618	583	637	618
	8	768	822	790	788	832	752	864	947	820
230	8	1317	1233	1341	1269	1516	1588	1526	1434	1403
538	8									2328
403	9	1808	2290	2149	2109	1876	2147	2020	1839	2030
54	3	515	437	440	459	404	433	479	528	462

22	160171	524	44	3	126	44	64	4190
22	160171	524	44	3	126	46	57	2490
22	160171	524	44	3	126	47	62	3260
22	160171	524	44	3	126	49	72	4930
22	160171	524	44	3	126	50	64	3590
22	160171	524	44	3	126	51	63	3850
22	160171	524	44	3	126	58	61	3170
22	160171	524	44	3	126	61	64	3580
22	160171	524	44	3	126	63	69	4500
22	160171	524	44	3	126	65	62	4030
22	160171	524	44	3	126	72	68	3910
22	160171	524	44	3	126	74	62	3090
22	170171	525	25	3	127	13	69	4055
22	170171	524	35	3	127	19	75	5790
22	170171	524	35	3	127	20	67	4080
22	170171	524	35	3	127	23	72	5520
22	170171	525	25	3	127	24	70	3870
22	170171	525	25	3	127	27	64	4090
22	190171	525	25	3	127	30	66	3555
22	190171	525	25	3	127	32	71	4435
22	190171	525	25	3	127	46	67	4400
22	190171	525	25	3	127	47	68	4640
22	190171	525	25	3	127	48	75	6270
22	190171	525	25	3	127	53	73	6250
22	190171	525	25	3	127	56	62	3085
22	190171	525	25	3	127	62	72	5865
22	170171	525	25	3	127	80	80	
22	180171	525	93	3	128	20	64	3500
22	180171	525	93	3	128	23	59	2890
22	180171	525	93	3	128	24	67	3665
22	180171	525	93	3	128	32	74	6000
22	260171	524	35	3	129	6	63	3560
22	300171	524	30	3	130	11	73	5380
22	300171	524	30	3	130	12	67	4165
22	300171	524	30	3	130	15	70	4860
22	300171	524	30	3	130	16	71	4300

353	8	1836	2104	2185	1997	2131	2009	2245	2171	2085
173	8	1066	958	889	1070	836	729	1022	906	935
256	8	1229	1242	1486	1388	1145	1288	1406	1402	1323
473	4									2019
231	3	1370	1469	1463	1276	1526	1407	1491	1608	1451
125	3	1334	1326	1457	1478	1262	1130	1321	1356	1333
142		936	885	920	1024	854	922	801	951	912
119		784	804	848	914	857	920	722	827	835
277		1356	1327	1270	1168	1103	1240	1490	1340	1287
347		2344	2362	2301	2404	2426	2153	2261	2365	2327
98		2189	2242	2125	2388	2478	2364	2396	2349	2316
332		888	845	1055	974	1126	944	977	908	965
133	8	567	609	649	476	549	427	402	412	511
280	8	2110	1931	1850	1803	1899	1824	2121	2075	1952
220	8	1405	1319	1276	1427	1144	1112	1195	1178	1257
347	8	1764	1957	1832	1731	1493	1661	1582	1697	1715
129	8	1116	1241	1123	1165	1090	1392	949	1124	1150
234	8	1511	1505	1459	1654	1553	1787	1834	1707	1626
110	8	823	765	909	737	855	857	917	754	827
144	9	1171	1403	1334	1346	1277	1113	1397	1267	1289
216		1379	1214	1516	1574	1265	1415	1278	1167	1351
222		1606	1542	1892	1716	1716	2140	2223	1954	1849
192		1717	1841	1579	1420	1795	1368	1758	1486	1621
464										2953
138		857	841	888	899	782	854	875	789	848
336		2538	2306	2392	2483	2577	2247	2150	2345	2380
392		2060	2240	2117	2158	1885	1895	1946	1919	2028
135	8	812	847	720	853	965	1031	1061	890	897
128	8	1143	1068	1016	1132	845	965	1000	908	1010
93		400	438	375	391	489	481	407	348	416
321		2004	2037	2120	2342	1815	1920	1803	1860	1988
262	6	1323	1281	1236	1155	955	817	1165	854	1098
336	9	1564	1764	1784	2041	1904	1671	1574	1648	1744
308	8	1308	1251	1422	1613	1632	1742	1351	1378	1462
406	7	1589	1507	1668	1466	1475	1635	1552	1516	1551
304	6	1251	1432	1376	1314	1426	1255	1384	1461	1362

22	300171	524	30	3	130	18	68	5160
22	300171	524	30	3	130	23	67	4345
22	300171	524	30	3	130	25	61	3135
22	300171	524	30	3	130	29	58	2500
22	300171	524	30	3	130	30	61	2935
22	300171	524	30	3	130	40	69	4210
22	300171	524	30	3	130	42	68	4465
22	300171	524	30	3	130	45	65	3350
22	300171	524	30	3	130	48	77	6860
22	300171	524	30	3	130	51	58	2765
22	300171	524	30	3	130	57	68	4120
22	300171	524	30	3	130	79	65	3720
22	10271	524	32	3	131	17	68	5195
22	10271	524	32	3	131	20	63	3385
22	10271	524	32	3	131	23	63	3340
22	10271	524	32	3	131	29	70	4595
22	10271	524	32	3	131	30	54	1945
22	10271	524	32	3	131	31	69	5160
22	10271	524	32	3	131	34	65	3860
22	10271	524	32	3	131	35	67	4115
22	10271	524	32	3	131	40	57	2565
22	10271	524	32	3	131	45	54	2300
22	220271	523	75	3	133	35	50	1570
22	220271	523	75	3	133	37	50	1465
22	220271	523	75	3	133	47	50	1755
22	220271	523	75	3	133	96	54	1460
22	280271	523	90	3	134	1	59	2685
22	280271	523	90	3	134	2	75	5435
22	280271	523	90	3	134	3	48	1180
22	280271	523	90	3	134	6	55	2185
22	280271	523	90	3	134	9	59	2235
22	280271	523	90	3	134	11	60	3060
22	30571	524	37	3	144	5	73	4680
22	30571	524	37	3	144	40	58	2710
25	240272	523		4	1	1	58	

540	8									1862
468	8	1484	1512	1455	1416	1442	1483	1531	1407	1466
102	5	970	916	878	964	802	711	1035	926	900
230	6	1240	1101	1016	1068	928	754	965	829	988
154	5	843	952	1099	904	833	1049	925	930	942
223	6	1349	1424	1369	1307	1636	1635	1481	1329	1441
	9	1704	1864	1780	1723	1857	2029	1919	1542	1802
249		1174	1345	1286	1402	1293	1211	1416	1292	1302
787										3656
142	6	978	950	968	1023	990	930	1089	1090	1002
200	8	876	881	1102	1001	952	908	1017	1093	979
362		1306	1282	1133	1192	916	1075	911	1203	1127
395	7	1902	1625	1810	1781	2153	1785	2067	1784	1863
154	8	1253	1340	1224	1178	1238	1391	1229	1358	1276
130	9	863	712	1011	954	1019	996	818	875	906
385	8	1334	1406	1474	1382	1278	1377	1397	1220	1359
56	8	388	368	380	338	374	352	405	398	375
633	9									2296
277	8	1691	1212	1067	1090	948	1175	1205	1354	1218
255	9	1541	1625	1629	1655	1292	1459	1317	1374	1487
107	9	655	659	584	640	604	651	652	674	640
156	5	994	904	906	991	766	891	959	956	921
40	4	267	302	276	287	352	318	326	357	311
82		439	428	457	421	427	455	346	410	423
53	3	506	558	496	463	548	643	573	515	538
65	3	573	561	648	660	504	652	504	569	584
225	8	1570	1707	1432	1196	1516	1492	1618	1674	1526
361	9	594	577	555	637	609	614	625	656	608
61	3	432	388	298	343	427	366	434	364	382
122	8	706	729	654	816	770	676	662	595	701
55	5	274	325	298	267	297	305	326	325	302
198	8	1078	1104	901	891	1176	1241	1053	1140	1073
159	8	223	307	307	351	262	259	261	234	276
204		569	684	463	503	518	495	517	533	535
269	4									1775

25	240272	523	4	1	6	50	61	3	604
25	240272	523	4	1	7	52	83	4	763
25	250272	523	4	2	2	75	428	9	949
25	250272	524	4	10	1	68	335	8	1002
25	240272	523	4	13	2	60	200	9	1898
25	260272	523	4	14	1	71	289	9	1291
25	260272	523	4	17	1	52	125	3	630
25	260272	523	4	17	2	64	200	7	1423
25	260272	523	4	18	7	66	342	9	2289
25	260272	523	4	18	9	57	187	9	941
25	260272	523	4	20	2	51	30	3	495
25	270272	523	4	22	1	70	380	9	2087
25	270272	523	4	22	2	66	203	9	1139
25	270272	523	4	22	3	71	252	10	1767
25	270272	523	4	22	7	69	271	9	1994
25	270272	523	4	23	1	57	125	4	980
25	270272	523	4	24	1	68	257	10	1593
25	270272	523	4	24	3	60	226	9	1522
25	270272	523	4	25	7	51	150	3	809
25	270272	523	4	25	9	50	47	3	488
25	270272	523	4	25	14	60	275	6	1331
25	270272	523	4	25	17	60	189	4	1104
25	280272	523	4	29	11	73	400	9	2570
25	280272	523	4	29	12	77	640	9	2128
25	280272	523	4	29	17	53	115	3	933
25	280272	523	4	29	18	54	140	3	763
25	280272	523	4	29	19	55	88	3	812
25	280272	523	4	30	1	72	261	10	1913
25	280272	523	4	30	6	49	77	3	763
25	290272	523	4	36	1	46	45	3	401
25	290272	523	4	36	2	42	29	3	431
25	290272	523	4	36	19	49	63	3	586
25	290272	523	4	36	21	73	265	9	1517
25	290272	523	4	39	4	51	71	3	591
25	290272	523	4	39	5	48	22	3	193
25	290272	523	4	39	6	56	109	3	984

25	290272	523	4	39	7	51		52		663
25	290272	523	4	39	22	50		87	3	851
25	290272	523	4	39	23	53		80	3	709
25	290272	523	4	39	26	49		49	3	613
25	290272	523	4	39	41	75		412	10	1767
25	290272	523	4	40	15	71		202	9	1634
25	290272	523	4	40	16	50		56	3	676
25	290272	523	4	40	17	47		38	3	534
25	290272	523	4	40	23	44		38	3	545
25	10372	524	4	46	3	49		95	4	709
25	10372	524	4	46	4	47		33	3	443
25	10372	524	4	46	5	44		33	3	394
25	10372	524	4	46	7	47		52	3	601
25	10372	524	4	53	3	42		90	3	388
25	10372	524	4	53	7	46		74	3	348
25	10372	524	4	53	15	61		253	6	1179
25	10372	524	4	54	1	46		85	3	648
25	20372	524	4	59	1	77		399	12	1134
25	20372	524	4	59	19	72		340	10	1966
25	180172	523	3	150	3	66	3380	184	9	1569
25	180172	523	3	150	6	59	2580	127	6	1680
25	180172	523	3	150	7	68	3570	213	9	1950
	180172									
25		523	3	150	15	66	3880	215	9	1455
25	180172	523	3	150	42	71	4840	257	9	2208
25	230172	523	3	151	1	51	1590	43	3	736
25	230172	523	3	151	3	61	3490	305	7	1781
25	230172	523	3	151	5	75	6243	710	10	3449
25	230172	523	3	151	6	50	1591	66	3	783
25	230172	523	3	151	8	72	4570	320	7	2993
25	230172	523	3	151	13	70	4230	356	9	2771
25	230172	523	3	151	17	75	4370	193	9	1612
25	230172	523	3	151	20	60	3020	164	11	1867
25	230172	523	3	151	26	71	4330	92	10	1721

25	230172	523	3	151	28	64	3832	342	7	1858
25	230172	523	3	151	31	66	4523	218	6	1008
25	30272	523	3	152	1	67	3225	141	6	1525
25	30272	523	3	152	2	70	4060	453	9	2333
25	30272	523	3	152	4	63	3145	108	6	1441
25	30272	523	3	152	6	60	2585	89	9	1186
25	30272	523	3	152	8	57	2090	103	9	1035
25	30272	523	3	152	10	60	2760	216	9	1419
25	30272	523	3	152	17	64	3525	104	9	2005
25	30272	523	3	152	20	60	2650	134	4	1597
25	30272	523	3	152	21	68	2200	144	8	1171
25	30272	523	3	152	23	67	4550	303	9	2164
25	30272	523	3	152	25	64	3455	169		1875
25	120272	523	3	153	3	73	5105	226	9	1883
25	120272	523	3	153	4	73	5490	519	9	4170
25	120272	523	3	153	7	70	5002	228	9	2259
25	120272	523	3	153	8	54	2610	84	9	826
25	120272	523	3	153	9	70	5209	300	9	2828
25	120272	523	3	153	10	61	3525	131	8	1355
25	120272	523	3	153	11	63	3909	309	9	1538
25	120272	523	3	153	16	60	3356	188	9	1381
25	120272	523	3	153	18	64	3810	217	6	1388
25	120272	523	3	153	21	71	5435	321	10	3216
25	120272	523	3	153	22	59	3245	140	10	1768
25	120272	523	3	153	23	51	2038	71	3	715
25	120272	523	3	153	25	72	5360	211	6	2308
25	120272	523	3	153	26	69	4460	271		2287
25	120272	523	3	153	28	45	1542	40	3	703
25	120272	523	3	153	31	62	3500	184		1503
25	120272	523	3	153	35	52	2162	74	3	842
25	120272	523	3	153	39	70	4780	176	9	1538
25	120272	522	3	154	1	60	3000	86	9	1136
25	120272	522	3	154	3	62	3700	181	9	1551
25	120272	522	3	154	5	53	2293	109	3	1163
25	160272	523	3	156	2	66	4075	196	9	938
25	160272	523	3	156	3	68	5605	256	8	3171

25	160272	523	3	156	4	62	3585	181	9	1391
25	160272	523	3	156	6	56	2622	96	9	939
25	160272	523	3	156	8	71	4635	181	9	1620
25	160272	523	3	156	9	65	3662	74	9	1189
25	160272	523	3	156	10	62	4308	266	9	1821
25	160272	523	3	156	11	67	4657	174	9	1469
25	160272	523	3	156	15	68	4598	154	8	1445
25	160272	523	3	156	16	70	4208	200	9	1699
25	160272	523	3	156	17	68	5098	290	9	1675
25	160272	523	3	156	19	67	4523	223	9	1788
25	160272	523	3	156	20	62	3490	202	11	1422
25	160272	523	3	156	21	64	4475	181	10	1388
25	160272	523	3	156	22	64	4095	188	9	1616
25	170272	521	3	157	7	68	4572	244		2061
25	30472	524	4	165	20	56		93		376
25	30472	524	4	199	1	72		464	11	1936
25	260472	523	4	344	12	65		206	10	400
31	130473	521	4	164	6	69		490	10	3678
31	180273	523	3	171	1	75	4750	666	10	3304
31	180273	523	3	171	8	71	3950	176	10	2349
31	180273	523	3	171	9	71	4080	376	10	1080
31	180273	523	3	171	10	69	4030	399	10	2684
31	180273	523	3	171	13	68	3590	393	7	1726
31	180273	523	3	171	15	73	4320	308	11	2307
31	180273	523	3	171	22	68	3990	442	10	1180
31	180273	523	3	171	50	72	4410	398	10	1738
31	180273	523	3	171	58	61	2810	235	4	1503
31	180273	523	3	171	67	60	3720	204	10	1779
31	180273	523	3	171	72	64	3370	235	10	2399
31	240273	523	3	172	46	71	2910	486	10	2632
31	240273	523	3	172	55	69	3940	188	10	1818
31	240273	523	3	172	57	62	2600	205	10	1702
31	240273	523	3	172	68	50	1365	60	4	529
31	190473	524	4	213	1	69		308	10	885
31	200473	523	4	223	27	70		231	10	2301

31	200473	523	4	223	28	64	209	7	1992
31	200473	523	4	223	29	64	146		1029
31	220473	521	4	243	1	64	353	10	1594

ANNEX 4

Inventory of data and results of haddock fecundity estimates for SA5 for collections in 1955-56.

S.	Date	Area	Depth		Orig. S.	Fish	Len.	Weights				Age	Counts								
no.	D./M./Y.	code	fm.	Source	no.	no.	cm.	Round	GGI	GGO	Gonad		1	2	3	4	5	6	7	8	Ave
32	155	523		3	1	1	56				78	7									943
32	155	523		3	1	2	67				349	7									1701
32	155	523		3	1	3	68				205	8									2310
32	155	523		3	1	5	52				54	6									602
32	155	523		3	1	6	56				78	7									944
32	155	523		3	1	7	56				106	6									993
32	155	523		3	1	8	65				157	7									1489
32	155	523		3	1	9	56				155	5									1017
32	155	523		3	1	10	64				222	10									1660
32	155	523		3	1	11	64				174	10									1731
32	155	523		3	1	12	68				256	7									1731
32	155	523		3	1	16	56				156	5									813
32	155	523		3	1	20	53				111	6									1043
32	155	523		3	1	23	63				117	5									1204
32	155	523		3	1	24	59				145	6									1564
33	256	523		3	2	1	71				383	8									2120
33	256	523		3	2	6	59				172	7									1322
33	256	523		3	2	8	48				74	4									565
33	256	523		3	2	9	47				62	4									696
33	256	523		3	2	10	53				119	7									695
33	256	523		3	2	11	50				52	6									629
33	256	523		3	2	12	46				75	5									348
33	356	523		3	3	1	58				180	6									1152
33	356	523		3	3	2	62				260	6									1521
33	356	523		3	3	3	59				116	5									756
33	356	523		3	3	4	59				81	7									916

33	356	523	3	3	5	62	177	8	1174
33	356	523	3	3	6	55	121	6	615
33	356	523	3	3	7	65	196	7	1022
33	356	523	3	3	8	53	204	4	879
33	356	523	3	3	9	56	75	4	535
33	356	523	3	3	10	63	280	6	1217
33	356	523	3	3	11	53	67	6	1028
33	356	523	3	3	12	53	73	6	617
33	456	523	3	7	1	55	135	8	461